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# THE JOURNAL OF EDUCATION FOR BUSINESS

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# Applying What Works: A Case for Deliberate Psychological Education in Undergraduate Business Ethics

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The teaching of business ethics continues to be a topic of great concern as both businesses and business schools seek to develop effective approaches for fostering ethical behavior. Responses to this objective have been varied, and consistent empirical evidence for a particular approach has not emerged. One approach, deliberate psychological education, offers a means for extending and integrating elements of developmental theory and has proven effective in professional settings, with college students, and recently, with undergraduate business students. The authors propose that this model be considered as an effective approach for business education programs and offer suggestions for integrating this model within undergraduate business curricula.

**Keywords:** cognitive developmental theory, deliberate psychological education, ethics, moral development, pedagogy, reflection

The multiple corporate scandals in recent decades continue to negatively impact the public's trust in business (Kracher & Marble, 2008; Swanson, 2004). One dimension of the response effort has been to charge business schools with the responsibility of promoting increased levels of ethical training with undergraduate students (Halbesleben, Wheeler, & Buckley, 2005; Swanson) especially given business schools are heavily criticized for producing graduates obsessed with making money regardless of moral consequences (Alsop, 2003). Business students cheat more, are less cooperative, and are more cynical than students from other majors (Brown, Sautter, Littvay, Sautter, & Bearnes, 2010; Covey, 2006; Frank, 2004; McCabe & Trevino, 1995). There are concerns in the literature that university education in vocational areas such as business is not accomplishing well the goal of moral development and that an ethical crisis exists within these disciplines (Cagle, Glasgo, & Holmes, 2008; Falkenberg & Woiceshyn, 2008; Mayhew, Seifert, & Pascarella, 2010;

McNeel, 1994; Nguyen, Basuray, Smith, Kopka, & McCulloh, 2008). Among undergraduates, business majors were more likely to show significant decreases in principle reasoning across their four-year programs. Additionally, graduate business students enter university with the lowest level of moral reasoning skills of any graduate students and are the only students to experience a decline in their moral reasoning upon graduation (Aspen Institute, 2003; Conroy & Nelson, 1989; Poff, 2007). More specifically, much of the business ethics education literature has focused on business schools' need to increase efforts to foster moral reasoning development in students (Christensen, Pierce, Harmon, Hoffman, & Carrier, 2007), emphasizing that "sound moral reasoning is necessary for good business" (Kracher & Marble, 2008, p. 504). Hence, though it is accepted that higher levels of moral reasoning can positively impact ethical decision making, there remains a significant lack of ethics coursework in business curricula (Breaux, Chiasson, Mauldin, & Whitney, 2010) and a lack of coherence about the most effective pedagogies for enhancing moral development (Falkenberg & Woiceshyn; Mayhew & Engerg, 2010; Poff).

Deliberate psychological education (DPE; Mosher & Sprinthall, 1971; Sprinthall & Thies-Sprinthall, 1983) is

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grounded in cognitive developmental theory (Hunt, 1971, 1976; Kohlberg, 1968; Loevinger, 1976; Piaget, 1954) and seeks to positively impact the constructive nature of the meaning-making process through deliberate cognitive discourse and instructor-assisted systematic personal reflection. The DPE model is designed to promote growth toward formal operations, increased psychological complexity, and identity formation (Brendel, Kolbert, & Foster, 2002; Royal & Baker, 2005) and has been repeatedly shown to promote moral reasoning (principled) in different professions as well as assisting in the acquisition of desirable behavioral skills within professional roles (Neukrug & McAuliffe, 1993; Reiman & Peace, 2002; Royal & Baker; Sprinthall, Peace, & Kennington, 2001). A recent DPE intervention with 178 undergraduate business students in a one-credit, semester-long course significantly increased student moral reasoning (Schmidt, McAdams, & Foster, 2009). Here we deliver a detailed account of DPE and the unified and grounded framework it offers as well as its connection to some presently recommended teaching practices in business ethics. We suggest that this framework effectively responds to present business ethics education critiques. As university accreditation bodies call for more effective ethics coursework, determining the most beneficial delivery methods is critical (Breux et al., 2010).

## BACKGROUND

Intent on shaping effective and ethical future business leaders, recent literature addressing best practices in business ethics education emphasizes a strong commitment to considering ethical dimensions throughout courses, curriculum, and academic communities in business education (Breux et al., 2010; Business Roundtable Institute for Corporate Ethics, 2007; Poff, 2007; Wilhelm, 2008). Additionally, the literature recommends developing pedagogy focused on enhancing the moral reasoning capacities of students in order to prepare them for the ethical challenges they will face (Cain & Smith, 2009; Traiser & Eighmy, 2011).

To date, interventions toward these goals have consisted primarily of traditional classroom lectures coupled with case-study approaches, which introduce students to present ethical issues in business while providing frameworks for ethical analysis and decision-making (Adams, Tashchian, & Shore, 1999; Falkenberg & Woiceshyn, 2008; Fort & Zollers, 1999; Lampe, 1997; Sims, 2002; Wilhelm, 2008). Additionally, some programs have attempted to incorporate experiential learning approaches, ranging from role-playing, trips to local prisons, and various other service learning experiences (Bok, 1988; Bowden & Smythe, 2008; Castleberry, 2007; Kracher, 1999; Lampe; Sims).

Although some teaching techniques have successfully enhanced student moral reasoning (Falkenberg & Woiceshyn, 2008; Nguyen et al., 2008), questions persist regarding the most effective educational interventions for promoting eth-

ical graduates (Breux et al., 2010; Cagle et al., 2008) and the theoretical orientations that inform them. Various authors (King & Mayhew, 2002; Williams, Yanchar, Jensen, & Lewis, 2003) have emphasized that business ethics education interventions must be grounded in relevant research and introduced early in the educational process when students' character development is presumed to be in a more formative place. Still, there is presently no accepted pedagogical model for this population (Breux et al.; Cagle et al.). Interestingly, the educational intervention designed specifically to promote moral development, DPE (Mosher & Sprinthall, 1971; Reiman & Peace, 2002), has only once been applied in the area of business ethics education (Schmidt et al., 2009).

## DELIBERATE PSYCHOLOGICAL EDUCATION (DPE)

### Theory and Research

Based on cognitive developmental theory (CDT), DPE is a comprehensive theory of human development that explains how humans create meaning making systems used to interpret and make sense of their experiences in the world (Merriam, 2004; Merriam & Heur, 1996; Sprinthall et al., 2001). Educational efforts toward promoting growth in the moral domain of cognitive development stem from the work of Kohlberg (1976), and Rest, Narvaez, Bebeau, and Thoma's (1999) and Rest, Narvaez, Thoma, and Bebeau's (2000) neo-Kohlbergian approach. The tenants of CDT include, but are not limited to, the following: (a) individuals construct knowledge through experience; (b) development entails cognitive dissonance, and assimilation and accommodation assist in the process of equilibration; (c) cognitive and skill development occurs as an individual's values and reasoning's become more complex, integrated, and principled over time; (d) cognitive developmental growth is not automatic, but it occurs due to interactions within a supportive and progressively challenging context (Dotger, 2006); and (e) the process of cognitive development occurs in hierarchical and sequential stages (Cain & Smith, 2009; King, 2009; Zhang, 2002).

Adhering to these principles, DPE stimulates the cognitive and psychological processes that form individual meaning making systems. DPE illustrates that the process of development occurs through person-environment interaction, wherein an individual is required to understand experiences in a more complex fashion and hence develop cognitively (Reiman & Peace, 2002; Reiman & Thies-Sprinthall, 1993; Royal & Baker, 2005). Individuals at higher levels of cognitive development have a propensity to function more effectively in a complex society; they tend to be more flexible, more adaptive, and more accurate in their responsiveness to change (Bennet-Levy, 2006; Duys & Hedstrom, 2000; Sprinthall, Reiman, & Thies-Sprinthall, 1996; Whiston & Coker, 2000). Additionally, those at higher levels are better



able to read and flex to changing circumstances, better able to take the emotional perspective of others, more tolerant of diverse perspectives, and more likely to find alternative solutions to problems (Brendel et al., 2002; Choate & Granello, 2006; Mudrack, 2003). DPE interventions performed with teachers at various levels of experience, law enforcement trainees, dentists, veterinarians, and multiple college student populations contribute to significant change in conceptual complexity, principled moral reasoning, as well as performance tasks (Bebeau, 1994; Clarkeburn, 2002; Duckett & Ryden, 1994; Kaiser & Ancellotti, 2003; Lawson & Foster, 2005; Morgan, Morgan, Foster, & Kolbert, 2000; Ponemon & Gabhart, 1994; Reiman & Peace, 2002; Reiman & Thies-Sprinthall, 1993; Royal & Baker, 2005; Self & Baldwin, 1994; Self, Olivarez, & Baldwin, 1994; Thies-Sprinthall, 1984).

Present business literature demonstrates the increasing recognition of CDT and moral development theory's applicability to business ethics education (Bok, 2006; Falkenberg & Woiceshyn, 2008; Fraedrich, Thorne, & Ferrell, 1994; Izzo, 2000; Kracher, Chatterjee, & Lundquist, 2002; Mudrack, 2003; Poff, 2007; Traiser & Eighmy, 2011; Wilhelm, 2008). Authors have utilized these theoretical perspectives to conceptualize business student ethical development. Some of the suggested teaching strategies within business ethics education overlap with the instructional approach of DPE (e.g., Felton & Sims, 2005). However, the educational implementation of these perspectives has been haphazard at best (Traisner & Eighmy, 2011; Wilhelm, 2010; Nguyen et al., 2008), lacking the comprehensive connections to the theory's major tenants and the conditions that stem from them.

### DPE Conditions and Process

The DPE model identifies five necessary conditions of a learning environment in order for developmental change to occur (Reiman & Peace, 2002; Royal & Baker, 2005; Schmidt et al., 2009; Thies-Sprinthall, 1984), situating learning in a social role-taking context in which development is facilitated through collaborative activities, dilemma discussions, and active, guided inquiry. As mentioned, while some of these conditions have been implemented in business ethics education, all five are what constitute significant and replicable change. The first condition is that the learners experience a new and qualitatively significant role-taking experience (Poff, 2007; Wilhelm, 2008). The new role must require an advanced level of cognitive functioning from the learners' present one, but it must not be so advanced that they become overwhelmed. Second, learners must be provided with careful and continuous guided reflection throughout the learning process by a more capable other (Mayhew et al., 2010; Reiman & Johnson, 2003). Learners must be given ample opportunities to reflect on and come to understand the unique meaning of their experience through activities such as small and large group discussions and journaling, whereby they

can balance their own perception of an experience with that of peers and the instructor (Poff; Wilhelm). This act includes both analysis (self-assessment) and metacognitive processing. A new experience alone is insufficient to promote development and hence, for cognitive growth to occur, reflection must be purposeful and continuous to ensure that the experience has functional meaning to learners (Guiffreda, 2005; King & Kitchner, 1994; Schön, 1983; Walsh, 2010); this balance describes the third condition. The fourth condition necessitates that the experience and reflection be continuous over time. Though 6–12 months is suggested (Rest, 1986), significant moral reasoning change has occurred in three-month-long interventions (Fischer & Pruyne, 2002; Griffith & Frieden, 2000; Schläfli, Rest, & Thoma, 1985). Continuity enables learners to accomplish the difficult task of incorporating newly acquired ways of making meaning. The final condition entails a combination of support and challenge. Challenging learners to incorporate new systems for understanding their experiences requires that they also be supported through the pain and dissonance resulting from the abandonment of old systems (Kitchener, Lynch, Fischer, & Wood, 1993; Knowles, 1980; Maslow, 1968). Without ample individualized support and challenge, learners may revert back to the safety of old patterns of thought and action (Bower, Diehr, Morzinski, & Simpson, 1998).

DPE utilizes the Piagetian concept of facilitating cognitive growth through the establishment of a deliberate learner-to-environment mismatch in which learners are encouraged to use a mode of thinking one developmental level above their presently preferred one (Holloway & Wampold, 1986). Hunt (1976) stressed the importance of this Plus One approach as a means to encourage learners to pursue new levels of cognitive complexity without becoming overwhelmed in the task. An appropriately mismatched and individualized learning condition enables changes in how one reasons cognitively and, thus, impacts future behaviors (Lawson & Foster, 2005). Though any strong university course should challenge students to higher levels of thinking, DPE is unique in that such challenges are individualized within reflective activities, paired with individualized support, and used in conjunction with the other conditions.

### DPE Application

Adaptability to existing courses and curricula is a consistently reported strength of the DPE framework in previous applications. Therefore, satisfying the necessary DPE conditions in an existing course requires revision to only some aspects of course content delivery, not the course itself. Table 1 outlines the goals, activities, and objectives utilized to organize such a course. In line with a developmental model and a moral deliberation approach to teaching ethics, utilizing case studies for dilemma discussion and teaching the processes of psychological development (Falkenberg & Woiceshyn, 2008; Penn, 1990) remain requisite. With moral reasoning growth

TABLE 1  
Course Goals, Activities, Objectives in Relation to Deliberate Psychological Education

Goal	Activities	Objectives
Raise awareness of ethical issues in business	<ul style="list-style-type: none"> <li>• Case studies</li> <li>• Class discussion</li> </ul>	<ol style="list-style-type: none"> <li>1. Obtain knowledge of five different philosophical perspectives of ethics and morality: justice, relativism, utilitarianism, egoism, and deontology</li> <li>2. Recognize and understand the influential effects of a group or culture on an individual's moral judgment</li> </ol>
Expose students to ethical issues and means for responding	<ul style="list-style-type: none"> <li>• Class discussion</li> <li>• Presentation team meetings</li> </ul>	<ol style="list-style-type: none"> <li>1. Obtain knowledge of moral reasoning as characterized by Kohlberg and of the stages of moral development</li> </ol>
Expose students to models of decision-making	<ul style="list-style-type: none"> <li>• Utilization of ethical decision-making model for team presentations</li> </ul>	<ol style="list-style-type: none"> <li>1. Understand the importance of ethical decision-making models and practically apply one of these models to an ethical dilemma</li> </ol>
Moral reasoning stage advancement	<ul style="list-style-type: none"> <li>• Class discussion</li> <li>• Perspective-taking activities</li> <li>• Reflective journals</li> <li>• Guided reflection team meetings</li> </ul>	<ol style="list-style-type: none"> <li>1. Advance stagewise</li> <li>2. Utilize metacognitive processes through reflective activities</li> <li>3. Evaluate personal stage level</li> <li>4. Recognize the many possible decisions to be made when confronting ethical situations and incorporate multiple perspectives in deliberating on a decision</li> <li>5. Process and evaluate actions as a presentation team and as individuals</li> <li>6. Accept and incorporate the feedback of peers and the instructor(s) throughout the course and in particular, in response to presentations and journal reflections.</li> </ol>

as a defining goal of the curriculum, the additional elements stemming from the DPE conditions should include (a) students engaging in written reflection via responses to prompts that highlight personal thought processes related to ethical reasoning; (b) instructor-assisted guidance through support and challenge by means of regular and detailed responses to the written reflections; (c) team evaluation of ethical dilemma case studies and a presentation of their findings and principles used for decision making; (d) face-to-face team reflections with one another and then the instructor postpresentation, focused on students' intra- and interpersonal experiences; (e) directly and purposefully offering support and challenge to students in the classroom discussions to take multiple perspectives when considering the case studies and differing student viewpoints; and (f) integrating micro and macro moral-ethical development assessments over the length of the course.

The DPE framework supports the emphasis of present business ethics education literature in that ethics courses should be grounded in moral philosophy and relevant research, applied to a present ethics course with minimal intrusion, employ an analytical framework, attain concrete ethical knowledge and skills, illuminate the intrapersonal aspects of ethical development, increase self-understanding, develop an individual's moral imagination, and clarify personal boundaries (principles). DPE is designed to foster precisely this type of growth. Thus, on the basis of its pedagogical and professional relevance, the DPE framework emerges as one that seems particularly appropriate for responding to the is-

sue of teaching business ethics. Although only one study has examined DPE within undergraduate business ethics education (with promising results), its suitability is projected given its empirically proven effectiveness in a number of other fields. To illustrate, Table 2 outlines the delivery of one lesson, "A Stakeholder Analysis," in a DPE-based business ethics classroom.

### Implementing DPE Conditions

Table 3 highlights the critical instructional components related to each of these DPE conditions. Entrance into undergraduate study, or specifically into an upper level business program and the new experiences inherent in it, can partially fulfill the role-taking experience necessary for this type of intervention. As noted in Table 3, student involvement in teams for presentations, reflective activities, and competitive business simulations can also satisfy this new role-taking experience. The combination of the acts of deliberating within a small group, finalizing and delivering a presentation of the group's work, and the guided reflection meetings that follow will likely suffice as experiences beyond student's present zone of comfort. Because research shows that involvement in a service-learning experience, or peer helping relationship, that students can participate and reflect upon can additionally enhance moral reasoning capabilities (Comunian & Gielen, 2006), such activities could also be considered for inclusion.

Students can receive different levels of support and challenge during their coursework through multiple means:



TABLE 2  
Deliberate Psychological Education (DPE) Lesson Plan

	A stakeholder analysis (incorporating perspective-taking)	DPE condition utilized
Assignments	<p>Prior to class</p> <ol style="list-style-type: none"> <li>1. Reading: "A Stakeholders Approach to Business Ethics" (Weiss, 2003)</li> <li>2. Case study: "An Education on Prescription Drugs" (Virginia Foundation for Independent Colleges, 2005)</li> </ol>	
Review	<p>In class</p> <ol style="list-style-type: none"> <li>1. Verbally summarize themes from the students' written reflections, which have been responded to and returned electronically by instructor or assistant</li> <li>2. Opportunity for student comments</li> </ol>	<ol style="list-style-type: none"> <li>1. Guided reflection</li> <li>2. Support and challenge</li> </ol>
Didactic	<ol style="list-style-type: none"> <li>1. Review major points from reading</li> <li>2. Use the case study from reading (Exxon Valdez) to emphasize topics from reading</li> </ol>	<ol style="list-style-type: none"> <li>1. Balance</li> </ol>
Team presentation	<ol style="list-style-type: none"> <li>1. Brief review of dilemma</li> <li>2. Stakeholders considered</li> <li>3. Decision-making model utilized</li> <li>4. Ethical principles utilized and emphasized</li> <li>5. Three options for action</li> <li>6. Reasoning behind final action choice</li> </ol>	<ol style="list-style-type: none"> <li>1. Role-taking</li> <li>2. Balance</li> </ol>
Discussion	<ol style="list-style-type: none"> <li>1. Class questions and discusses team's reasoning, option analysis, and offers suggestions</li> <li>2. Socratic dialogue</li> </ol>	<ol style="list-style-type: none"> <li>1. Support and challenge</li> <li>2. Role-taking</li> </ol>
All students	<p>Postclass</p> <p>Reflection assignment: How important is it to acknowledge and incorporate multiple points of view when practicing moral deliberation? Why?</p>	<ol style="list-style-type: none"> <li>1. Guided reflection</li> <li>2. Support and challenge</li> <li>3. Balance</li> </ol>
Presentation team	<p>Guided reflection team meeting immediately following the class</p> <p>Additional journal question: What unique viewpoint did you bring to your group's processing of your assigned ethical case in preparing for your presentation?</p>	<ol style="list-style-type: none"> <li>1. Guided reflection</li> <li>2. Support and challenge</li> <li>3. Balance</li> </ol>

TABLE 3  
Integrating Deliberate Psychological Education (DPE) Conditions Into an Undergraduate Course

DPE condition	Suggestions for faculty integrating DPE approach
Role-taking experience	<ol style="list-style-type: none"> <li>1. New student role: entrance into undergraduate business program (exposure to new educational challenges and professional contexts)</li> <li>2. Involvement in the guided team reflective groups</li> <li>3. Case presentations (in teams) and critical feedback from peers and faculty</li> </ol>
Support and challenge	<ol style="list-style-type: none"> <li>1. Instructor(s) feedback on journals both encourages and challenges students' level of reflection</li> <li>2. Reflective group (team) discussion of ethical cases (exposure to contrasting viewpoints while seeking consensus)</li> <li>3. Instructor(s) challenges students to practice perspective-taking in class discussions</li> </ol>
Reflection	<ol style="list-style-type: none"> <li>1. Require students to keep journals throughout course; provide reflective prompts for each journal entry</li> <li>2. Instructor(s) meets with guided reflective group to facilitate group reflection and perspective-taking</li> <li>3. Class discussion of case studies and consideration of various ethical principles</li> </ol>
Balance of reflection and role-taking	<p>Evaluation of the balance can be accomplished through:</p> <ol style="list-style-type: none"> <li>1. Review of journal responses and researcher/instructor discussion concerning major themes</li> <li>2. Immediate reflection exercise upon completion of major role-taking activity (presentations)</li> <li>3. Continual evaluation of experimental group progress through researcher-instructor meetings</li> </ol>
Continuity	Semester-long course, with regular journal entries and opportunities to meet with instructor

in-class instructor feedback, reflective dialogue through journal feedback, and in-person team guided-reflective groups. Within the stakeholder lesson (Table 2), students are challenged through course content discussion, ethical dilemma (case study) decision making, and more precisely within the guided reflection team meetings as well as the developing dialogue taking place within their reflective journals. The instructor(s) can provide support for students' understanding and processing of the content or case study and their willingness to engage themselves in the learning process, encourage their struggles with the dilemma, and provide empathetic responses to any challenges experienced with the material (i.e., prioritizing stakeholders, in-depth perspective taking). As the most complex pedagogical requirement of DPE, the instructor encourages a knowledge perturbation by differentiating the amounts of support, structure, and challenge offered to individual students; hence, the more intrapersonal reflective activities provide the greatest opportunities for this condition.

Over the course of the semester the students should be increasingly confronted with more difficult content, more challenging case studies, and more complex dilemma discussions (Sims & Felton, 2006). Thus, students must consider a greater number of variables and consequently, the classroom discussions begin to highlight multiple ethical principles. As students gain comfort writing responses to reflective prompts, this DPE condition enables opportunities for more personalized in depth responses to their journal entries and more complex questions about their reasoning process. For instance, if a student begins to explore concepts of fairness or equity when considering stakeholders, challenging personalized responses might include facilitating further inquiry into the principles the student tends to utilize when defining fairness or equity and the evolution of those principles. While many ethics courses intentionally provide increasingly challenging content, within DPE, the instructor(s) must consistently monitor and balance the supportive elements with the delivery of personalized challenges necessary to promote growth (Faubert, Locke, Sprinthall, & Howland, 1996; Wilhelm, 2008).

A critical component of DPE entails the inclusion of purposeful *reflective* activities (guided inquiry). Business students in particular are rarely given sufficient opportunities to reflect on the content of their studies (Macfarlane, 1998; Poff, 2007). Students should be asked to write thoughtful and comprehensive reflective journals over the course of the semester, which are reviewed and extensively commented on by the instructor or an assistant. Instructors' written responses should entail an understanding of the typical thought processes taking place at each of the stages of moral development and an evaluation of what stage their responses evidence, and then encourage them to try and process the situation using reasoning skills from one level above their present one. If a student prioritizes three stakeholders in their reasoning (self, stockholders, customers) and evidences conventional reasoning

in the explanation, the instructor's responses might include questions regarding the impact of a decision on other stakeholders (coworkers, general public, subordinates) and ask how considering the perspective of these others might impact the decision on the dilemma. Students may also be asked to evaluate their reasoning utilizing a standard moral development schema such as Kohlberg's. Consistent and thoughtful responses using deliberate differentiation and questioning are not an effort to guide student understandings toward a particular end, but rather an effort to encourage deeper reflections on the individual process experienced by the student.

Students should also be asked to discuss and reflect on dilemmas as a class and in small groups with the instructor providing encouragement and challenge to promote further reflection. As seen in Table 2, it is suggested that students participate in a postpresentation, reflective group in which they can share their individual experiences with the project as well as reflect on their particular group process. These meetings provide opportunities to support both their achievements and their struggles while integrating their understandings of how higher-level ethical reasoning impacts such a process. Because the presentation teams engage in a more in-depth exercise regarding the particular case study, multiple opportunities for reflective dialogue on the process (not necessarily the content) are available: differing ethical principles, means and methods of reasoning, stage of reasoning, dominant perspectives, and emotions experienced.

A DPE course design should be continuous in that students engage in the material and activities steadily over at least one semester. The DPE conditions are effective when students are given the time necessary to move through periods of disequilibrium and equilibrium within an action-inquiry framework.

## SUMMARY

Despite the body of ethics education literature, very few studies have shown effectiveness in changing an individual's ethical reasoning development through programmatic ethics training. Many interventions have succeeded in assisting students to identify certain ethical scenarios, but a change in the student's moral reasoning did not occur (Halbesleben et al., 2005). Presently it should be clear, research based pedagogy or *best practice* is essential for business ethics education (Traiser & Eighmy, 2011). Initial results suggest that a DPE curriculum can impact business students as it has those in other fields of study; further evidence could provide the grounds for altering the way ethics is taught in business schools and provide a needed and established pedagogy (Cagle et al., 2008).

It should be noted that the DPE model as a whole could present some obstacles for consideration. For instance, faculty may be reluctant to emphasize the psychological over the philosophical and organizational perspectives within their



classroom. Also, faculty may not feel they qualify as the more capable other (with elevated moral reasoning capacities; Reiman & Johnson, 2003) necessary to foster moral development. Finding a significant role-taking experience within or outside of the curriculum may prove difficult and would likely require additional coordination. Providing the detailed and continuous feedback, through journals or personal meetings, requires time and attention from faculty that only some may be willing or able to contribute. Moreover, the requirement of a continuous intervention (e.g., one lasting long enough for the treatment effects to be seen), suggests that a full semester course is the minimum length (Schlaefli et al., 1985; Wilhelm, 2008). These obstacles, however, are surmountable; critical elements of the DPE and pre- and postassessment measures can be infused into the design and implementation of a present business ethics course with minimal additional instructor effort or assistance.

In developing theoretical and practical responses to ethical misconduct in business, there exist a number of empirically supported factors at play. First, those students of business who believe that their moral compass becomes firmly set at an early age, and is thus relatively unchangeable, have made false assumptions (Poff, 2007; Rest et al., 1999). Second, there are theoretically congruent, research based methods for encouraging moral development within educational programs (Faubert et al., 1996; Mayhew & Engberg, 2010).

As scrutiny of businesses increases and the understanding that ethical practice is beneficial for the organization's bottom line proliferates, a theoretically and empirically-based educational intervention must be considered (Halbesleben et al., 2005; Swanson, 2004). DPE's success in enhancing moral reasoning cannot be overlooked. If individuals are to reorganize their thinking, they must be more actively involved in the process (Kohlberg, 1986) and their higher order reasoning skills must be stimulated (King, 2009). At the junior and senior levels, when students are about to enter a less constricted environment, encouraging and facilitating the personal growth necessary to most ethically problem solve seems even more appropriate. The DPE model offers such an opportunity and given the present state of affairs, this could be a vital time to integrate the latest psychological research with a population in need.

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## Enhancing Student Experiential Learning With Structured Interviews

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Learning through experience can be rewarding but intimidating. To maximize the benefits of experiential learning assignments, students need to have confidence in their abilities. The authors report how a structured-interview instrument effectively facilitated experiential learning for accounting students without extensive content-specific knowledge. A total of 117 students administered the structured interview to individuals in charge of financial operations in a religious organization. Analysis of student reactions indicated that the experience helped them to internalize concepts from their classroom learning and formulate recommendations for control and other improvements in the organization. The structured-interview experiential learning assignment successfully enhanced student confidence and reduced anxiety.

**Keywords:** experiential learning, fraud, internal control, religious organization, structured interview

Business educators continually search for teaching tools that provide effective, dynamic learning activities at the undergraduate and graduate levels. Business school pedagogy typically includes traditional lectures, problem demonstrations, and completion of case studies (Harvard Business School, 2004). Recent research has found, however, that these traditional approaches may be complemented by experiential learning—a student-centered form of instruction (Felder & Brent, 1996) that uses an interactive approach to business school pedagogy (D. A. Kolb, Boyatzis, & Mainemelis, 2000).

Experiential learning is the process of making meaning from direct experience (Itin, 1999). In practice, it has taken many forms, including internships and other cooperative education placements (Hakeem, 2001), job shadowing (McCarthy & McCarthy, 2006), and managerial accounting consulting arrangements (Barsky, Catanach, & Lafond, 2008).

These learning experiences provide the student with valuable interaction with seasoned professionals (D. A. Kolb et al., 2000). When done effectively, experiential learning allows the student to (a) integrate classroom learning with real-life experience, (b) gain insight into potential careers,

(c) develop mentoring relationships, (d) network with future colleagues, and (e) gain self-confidence with respect to their own knowledge and skill sets.

Despite these benefits, adoption of experiential learning can be intimidating for both student and instructor. We therefore present the structured interview—a relatively simple but effective learning tool that allows undergraduate and graduate accounting students to take their first step into experiential learning and build confidence and enthusiasm for more intense experiential learning and real-world activities.

We conducted an experiential learning assignment using structured interviews that were administered by 117 undergraduate ( $n = 85$ ) and master of business administration (MBA;  $n = 32$ ) students. The interviews related to internal controls and fraud involving houses of worship (e.g., churches, synagogues). The results of this instructional experience, which are reported in this study, were quite positive and provided an effective learning experience.

We recommend this type of experiential learning exercise for courses such as introductory accounting or any accounting course where students may feel a lack of expertise that makes them anxious about interacting with professionals. The exercise helps the students interact with professionals, integrate their classroom learning with real-life situations, better internalize accounting concepts, and gain confidence in their own skill set.

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## WHAT IS EXPERIENTIAL LEARNING?

For the things we have to learn before we can do them, we learn by doing them. —Aristotle (Bynum & Porter, 2005, p. 135)

Experiential learning is education through active experience and reflection on that experience. Experiential learning may be contrasted with other types of learning, such as rote memorization, didactic learning, or open learning in which students learn through self-directed investigation of topics they find interesting. Experiential learning involves a “direct encounter with the phenomena being studied rather than merely thinking about the encounter, or only considering the possibility of doing something about it” (Borzak, 1981, p. 9). Whereas the dimensions of other types of academic learning include constructive learning and reproductive learning, important dimensions of experiential learning include analysis, initiative, and immersion (A. Y. Kolb & Kolb, 2005). Though both traditional academic and experiential learning seek to instill new knowledge in the learner, academic learning does so through more abstract, classroom-based techniques, while experiential learning aims to actively involve the learner in a concrete experience (Stavenga de Jong, Wierstra, & Hermanussen, 2006).

In a review on experiential learning, Gosen and Washbush (2004) found significant evidence to suggest that it is an effective methodology. Furthermore, McCarthy and McCarthy (2006) reported quantitative student responses indicating that experiential learning is more effective than case studies at promoting certain types of learning.

To truly gain knowledge from an experience, certain attributes should be present including (a) the willingness of the learner to be actively involved in the experience, (b) the opportunity to reflect on the experience, and (c) the ability to use problem solving and decision-making skills to implement new ideas gained from the experience (Merriam, Caffarella, & Baumgartner, 2007). However, there are barriers that preclude students from effectively learning from an experience. These barriers occur in situations in which the environment is new or complex or in which the learner feels inadequate or unprepared to participate due to a lack of topic-specific knowledge. These types of barriers are prevalent with many students enrolled in introductory accounting courses, primarily due to the perceived complexity of accounting and the significant mathematics component in the course. We discuss these barriers and how the structured interview helps reduce them for students attempting to engage in an experiential learning activity with new or challenging material.

## BARRIERS TO EDUCATION THROUGH EXPERIENTIAL LEARNING

Tell me and I will forget, show me and I may remember, involve me and I will understand. —Confucius, Chinese Proverb (Rohsenow, 2003, p. 189)

A prominent barrier to effective education through experiential learning is the students’ feelings of incompetence and inadequacy, particularly with complex topics such as accounting. Bandura’s (1977, 1986) work revealed that people are unlikely to engage in tasks that they believe exceed their abilities or in which they feel inadequate. However, according to Bandura (1991), the most important component to increasing or reinforcing positive levels of self-efficacy is experience related to the task or knowledge being acquired.

Relying on theories of self-efficacy, including the work of Bandura (1977, 1986), McCarthy and McCarthy (2006) reported the results of a job-shadowing experiential learning exercise that was effective at promoting student involvement in learning through professional interaction. Content-related experience can also be provided through accounting and other business internships, but these opportunities typically occur quite late in a student’s academic career.

We wished to create and test an experiential learning tool—the structured interview—that would effectively reduce student need for extensive content-specific knowledge and allow them to engage in experiential learning at an early point in their academic career. Using the structured interview approach, the student is provided with a complete interview instrument and is required to (a) solicit a subject for the interview, (b) conduct the interview, (c) report the results of the interview, and (d) report their reaction to the interview. This structure contributes to a setting in which the student’s anxiety over lack of content-specific knowledge is reduced, which should boost their feelings of self-efficacy, willingness to participate in the exercise, and ability to benefit from the exercise.

## THE STRUCTURED INTERVIEW

The structured interview is a quantitative research method with the aim of ensuring that each interview is conducted with exactly the same questions in the same order (Kvale & Brinkman, 2008). The interviewer simply reads each question exactly as it appears on the provided questionnaire and records the answers to the questions (Lindlof & Taylor, 2002). The questions may be either close- (e.g., yes–no, multiple choice, or single answer) or open-ended (Patton, 1991). This approach contrasts with a self-administered interview in which the interviewer must formulate questions to follow the subject’s prior response.

When structured interviews are used in survey research, the sequence of questions is important for minimizing the potential impact of context effects. However, this type of interview may be adapted to an experiential learning scenario (Tennant, 1997), and the instructor can arrange the questions in an order that allows the student to best evolve in his/her understanding of the interview content.

A key benefit to the structured interview is that the data can be collected by an inexperienced interviewer in a rote, formulaic manner. The student’s lack of topic-specific



knowledge is not an obstacle to the interaction between the student and the interview subject. Consequently, the student's sense of self-efficacy and ability to learn from the experience is enhanced.

### USING A STRUCTURED INTERVIEW IN EXPERIENTIAL LEARNING

In our study, we incorporated a structured interview requirement in classes at two academic levels: (a) students in an undergraduate accounting course and (b) students in two entry-level MBA accounting courses. The project required students to (a) seek out an appropriate interview subject, (b) conduct the structured interview, (c) record and report the responses, and (d) record reflections on the interview. The specified interview subjects were individuals involved in managing the finances of a nonprofit house of worship (e.g., church, mosque, synagogue), and the interview itself related to the religious entity's accounting policies, internal controls, fraud prevention, and incidence of fraud detection.

We selected houses of worship as the focus for the experience for several reasons. First, these organizations tend to be easily accessible to students, which reduces student anxiety, promotes successful completion of the first step, and consequently boosts student confidence. Second, while houses of worship are not businesses, they have most of the same internal control and fraud concerns that business entities have. Finally, churches tend to have inadequate controls (Busby, 2004; Throop, 2001; Ventura & Daniel, 2010), which makes them rich environments for student discovery.

We created a survey instrument that the students were to follow in conducting the interviews of their subjects. An abbreviated version of this instrument is provided in the Appendix, and the full instrument is available on request. After administering the survey, students returned to the instructor their recorded responses to all questions. They were also required to obtain the initials and phone number of the person they interviewed as a control measure to deter fraudulent interview reporting; and this information was also delivered to the instructor. Additionally, while the experience was still fresh, students were required to submit responses to three open-ended questions regarding their perceptions of the experience.

Finally, after the semester was over, students were sent a follow-up survey to further gauge their response to the experience. The main purpose of the follow-up survey was to obtain quantitative data regarding the impact of the assignment. There were two additional benefits to the follow-up survey. First, it eliminated concerns that students might have about the impact of their responses on their course grades, and, second, it allowed time for the experience to transfer to long-term memory.

A total of 117 students participated in the original assignment, and 75 provided responses to the voluntary, follow-up survey. The houses of worship from which the subjects

were chosen were primarily Christian (96%). In all other respects, however, these entities were quite diverse. The age of the institutions ranged from 2 to 167 years (median age = 59 years), membership ranged from 25 to 37,500 members (median = 400 members), and the annual expense budgets ranged from \$1,200 to \$30 million (median = \$493,500). Approximately 13% of the institutions acknowledged having experienced a fraud within the prior five years.

### RESULTS

The two purposes of the learning activity were to (a) determine whether the experiential learning format was effective as a component of an introductory accounting course and (b) determine whether the activity enhanced students' understanding of course-related accounting topics. To gauge the value of the activity in both areas, students were asked to provide feedback in two stages. Immediately after conducting the interview, students provided answers to three open-ended questions about the structured interview activity. Once course grades had been reported and the impact of the experience had been allowed to settle, students were sent an email link to a second questionnaire and asked to evaluate several aspects of the experience.

#### Open-Ended Questionnaire

Following are the three open-ended questions to which students responded immediately after the interview: (a) What did I learn? (b) What was most surprising? and (c) Based on your knowledge of accounting, if you were now placed in the position of the person you interviewed, what would you change about the organization, its personnel, or its processes?

The inherent limitation to any experiential learning exercise is that student experiences vary. For example, students whose interviewee reports an incident of embezzlement or fraud would have a different learning outcome than students whose interviewee reported no fraud incidents. Because of this variation, there was not an expectation that all students would learn the same thing. Accordingly, the open-ended questions allowed us to capture the variety of student reactions through analysis of both specific responses and aggregate content. Following is an analysis of the responses to each individual question.

*Question 1: What did they learn?* Our survey was geared toward introducing students to how accounting controls are implemented (or neglected) in religious organizations. The most prevalent response from students concerning what they learned was that nonprofit organizations, including houses of worship, have financial systems that operate much like any other for-profit enterprise. One student indicated that "Honestly, the entire experience was surprising. I couldn't believe a church had such extensive operations and procedures in order for things to run smoothly, yet it seemed



to have similar roles and duties taught in your everyday accounting class.”

Houses of worship are particularly vulnerable to embezzlement and other types of fraud (Busby, 2004; Throop, 2001; Ventura & Daniel, 2010); and several students recorded this realization. Furthermore, students reported that the organizations seemed to underestimate the likelihood of fraud. When asked how vulnerable the organization was to fraud most interviewees responded that their organization was “not vulnerable at all.” One student observed, “I do not think that should be anyone’s answer to that type of question.”

Perception of detection and perception of consequences are important tools for deterring fraud (Albrecht, Albrecht, Albrecht, & Zimbelman, 2008). Details of fraud incidents and fraud consequences must be publicized to some extent in order to convince other employees and volunteers that if they commit fraud, it will be discovered and there will be serious consequences. In this learning experience, however, students recognized the desire by many churches to avoid disclosure and, in some cases, to avoid even acknowledging the fraud. According to one student,

The Associate Pastor I spoke with said that the secretary was caught when the Pastor caught her putting offering money into her purse. The Senior Pastor suspected her of stealing because offerings were at record lows, but it was too sensitive of an issue and he didn’t act on that suspicion.

Another student reported,

I found it surprising that the Pastor I interviewed refused to comment on the instance of an employee or volunteer taking property or information with which they were not entitled to. They said that the instance was small and it ended in termination and that they wanted to protect the individual.

Although experienced accounting professionals recognize that confidentiality is a priority in religious organizations, students were able to observe how the associated nondisclosure ripened the culture for fraud.

On a related note, students recognized the role that high levels of trust played in increasing fraud vulnerability within the church. One student reported, “As an outsider with an objective point of view, I would say his organization is more than slightly vulnerable to illegal or unethical financial activity due to the lack of formal procedures and the relationships between employees.” Another reported, “After hearing all he said I can see why churches have fraud happen because they have a lot of faith in their leaders to act honestly, giving them room to be dishonest.” A third indicated that “In my opinion if I was a criminal and a thief, a church would be the ideal place to steal money. Everyone trusts everyone and believes the best in people.”

After reviewing each response, we aggregated and classified responses to each of the three questions by related

topic (see summary in Table 1). Overall, students consistently perceived a significant lack of proper accounting controls, excessive trust leading to the potential for fraud, multiple instances of fraud and embezzlement, and the similarities in financial operations between houses of worship and for-profit organizations. All of these observations were considered desirable learning outcomes for this experiential learning activity.

*Question 2: What surprised them?* Question 2 asked students, “What was most surprising?” These responses tended to mirror the responses to Question 1. Students expressed consistent surprise that clergy, church members, and staff would actually embezzle from a church. They were also surprised at the lack of proper accounting controls including (a) too much trust, (b) too little segregation of duties, and (c) infrequent or nonexistent audits. The general lack of accounting expertise and training by those involved in managing church finances was also eye-opening for them. Furthermore, one student expressed particular surprise at how applicable the content from her/his accounting course was in the religious organization.

*Question 3: What would they change?* The third question for students was, “Based on your knowledge of accounting, if you were now placed in the position of the person you interviewed, what would you change about the organization, its personnel, or its processes?” Students consistently expressed that they would (a) implement improved accounting controls, particularly segregation of duties involving handling of cash donations; (b) enhance oversight from the church board of directors, including involvement of the finance committee in accounting procedures; (c) increase the number of staff, particularly staff with accounting expertise; (d) implement mandatory rotation and term limits for members of the church’s oversight committee; (e) eliminate related parties (family members) acting in oversight capacities; and (f) enact or improve formal budgeting and control oversight processes.

Cumulatively, student responses indicated that students had varied experiences, as we expected. Overall, however, it was clear that the students understood the problems facing the organizations and were able to conceptualize formal recommendations for how to improve the accounting processes in these organizations. Their ability to apply their classroom learning appeared to improve their confidence and allowed them to act as accounting experts for the first time.

*Quality of the learning experience.* We also examined student responses to the open-ended questions for indications of the perceived quality of the learning experience. Responses ranged from quite simple, such as, “I learned a lot throughout this process and I am glad that I had the opportunity to participate in this study.” One student indicated

TABLE 1  
Student Responses to Structured Interview Experience Questions

Question
<p><b>Question 1: What did I learn?</b></p> <p>Too much trust among members and leaders leading to potential for theft/fraud/embezzlement/leaders staff committed to protecting church reputation</p> <p>Accounting controls / multiple checks and balances present but often insufficient to detect / prevent fraud</p> <p>Multiple instances of embezzlement and fraud</p> <p>Interviewees indicated that no theft or related problems in past related to no expectation of such events in the future</p> <p>Churches handle large quantities of money, particularly cash</p> <p>Substantial time from both staff and volunteers needed to operate a church</p> <p>Many organizations have formal codes of conduct with penalties for lack of adherence to the code</p> <p>Church parent organizations often provide significant oversight</p> <p>Churches operated "like other regular businesses"</p> <p><b>Question 2: What was most surprising?</b></p> <p>Clergy, members, and staff would actually steal / embezzle from church</p> <p>Too much trust among clergy, staff, and members</p> <p>Lack of proper accounting controls including segregation of duties</p> <p>No external, independent audit ever / not on regular basis</p> <p>Churches frequently conduct background checks (criminal, financial, references) for staff</p> <p>Lack of accounting expertise / training</p> <p><b>Question 3: Based on your knowledge of accounting, if you were now placed in the position of the person you interviewed, what would you change about the organization, its personnel, or its processes?</b></p> <p>Improved accounting controls, particularly segregation of duties involving handling of cash donations</p> <p>More oversight from church board of directors including involvement of finance committee in accounting procedures</p> <p>Implement external, independent audits at least annually</p> <p>Increase number of staff, particularly staff with accounting expertise</p> <p>Increase frequency of background checks, particularly credit checks</p> <p>Mandatory oversight committee rotation / committee term limits</p> <p>Eliminate related parties (family members) acting in oversight capacities</p> <p>Enact or improve formal budgeting / control oversight processes</p> <p>Implement formal code of conduct with penalties for noncompliance</p>

that, "Unlike most case studies, this particular one made me feel as if I walked away with a better understanding of how information taught in class translates into real, on-the-job activities and duties." Some indicated an enhanced knowledge of accounting procedures, such as "Overall, the interview experience provided me with a very solid understanding of the managerial accounting procedures and internal controls of (church name redacted), and religious organizations in general." Others expressed enhanced insight into financial controls generally, including, "Doing this interview was very enlightening for me personally. I have never really put much thought into how churches handle their finances and what types of accounting controls were in place if any." Another student indicated that, "I also learned about the controls, both formal and informal, the organization had in place and how those controls could be improved upon to develop a more secure financial system." Finally, another student expressed the positive nature of the interview experience,

Overall, I believe that this was a good opportunity to interact with someone with real world accounting experience. In general, the interview was a good learning experience for me, partially because my interviewee was very involved and willing to share his knowledge.

### Follow-Up Survey

After semester grades had been submitted, students were sent a link via email to a follow-up survey. The delay allowed the students to more accurately assess the extent to which the exercise had persistent learning effects. The response rate to this survey was 64% (75 of 117), the same for undergraduate and graduate students.

On a 5-point Likert-type survey students were first asked to respond to eight questions with responses ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Table 2 presents the questions, as well as results of one-sample *t* tests to determine whether student responses to each question differed from a neutral response of neither agree nor disagree, the response of 3 on the follow-up survey. Students agreed with each statement at a level that was statistically significantly higher than the neutral response.

Questions 1–4 dealt with the success of the assignment in accomplishing the goals of experiential learning exercises. Students agreed that as a result of the experience, they better understand how the concepts they learned in class apply in real world settings (Question 1,  $M = 4.21$ ). They agreed that the experience was more memorable to them than a classroom learning activity (Question 2,  $M = 3.76$ ) and that they would



TABLE 2  
Responses to Follow-Up Survey

Question	Overall mean <sup>b</sup>	Undergraduate student mean <sup>b</sup>	Graduate student mean <sup>b</sup>	Student mean comparison <sup>c</sup>
Question 1: The church interview experience helped me better understand how what I learned in class applies in the real world.	4.21***	4.21***	4.22***	$t = 1.10$
Question 2: The concepts I learned from this interview experience are more memorable to me than concepts learned from traditional forms of classroom learning (such as lectures and written assignments).	3.76***	3.69***	3.94***	$t = 0.98$
Question 3: I am more likely to retain the concepts I learned from this interview experience than from traditional forms of classroom learning (such as lectures and written assignments).	3.79***	3.69***	4.06***	$t = 0.87$
Question 4: This experience increased my level of interest in accounting controls and fraud.	3.91***	3.87***	4.06***	$t = 0.08$
Question 5: I was comfortable in interacting with the financial professional that I interviewed.	4.43***	4.37***	4.61***	$t = 0.37$
Question 6: This experience improved my comfort level for interacting with accounting professionals in the future.	3.90***	3.94***	3.78**	$t = 0.08$
Question 7: The questions for the interview were provided to me in the form of a script. If I needed to conduct an interview of a financial professional in the future, this experience helped me feel more confident in my ability to do so without a script.	3.86***	3.90***	3.72**	$t = 0.73$
Question 8: Answer this question only if you've been interviewed/surveyed in the past or conducted an interview or survey of someone else. I was more comfortable with this church interview than with other interviews/surveys with which I've been involved in the past.	3.68***	3.79***	3.46	$t = 2.06^*$

<sup>a</sup>Responses to each question item were provided based on a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

<sup>b</sup>\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$  when mean is compared to neutral point (3, neither agree nor disagree) of response scale

<sup>c</sup>Independent samples  $t$ -test comparing undergraduate and graduate student responses.

retain the learning longer (Question 3,  $M = 3.79$ ). One student commented that, "I still remember the conversation I had during the interview." They also agreed that the experience had increased their level of interest in the topic of the assignment—accounting controls and fraud (Question 4,  $M = 3.91$ ).

Questions 5–8 dealt with the success of the experience in reducing student anxiety and increasing student confidence for future experiences. Students strongly agreed that they were comfortable in interviewing the financial professional (Question 5,  $M = 4.43$ ) and that the experience increased their comfort level for future interactions with accounting professionals (Question 6,  $M = 3.90$ ), including future interviews in which they might not have a script (Question 7,  $M = 3.86$ ). Those who had prior experiences with interviews or surveys agreed that this experience was more comfortable for them than their prior experiences (Question 8,  $M = 3.68$ ).

We provide separate columns for the responses of undergraduate and graduate students in Table 2. The only significant difference occurs with respect to Question 8, wherein graduate students did not indicate that the experience was more comfortable for them than prior interview or survey experiences. This result is not surprising for graduate students, since most of the graduate students in this program are full-time professionals and are likely to have extensive experience with interviews.

We also looked for differences in the responses based on gender. There were no significant differences here, except with respect to Question 1, "The church interview experience helped me understand how what I learned in class applies to the real world." Female students expressed stronger agreement with this statement than did male students.

As with all survey evidence it is possible that our results are partially driven by a demand effect. That is, students may have provided responses that they perceived would please the experimenters. While we cannot entirely rule out this possibility, we believe there are three primary reasons why it is unlikely our results are solely attributable to a demand effect bias. First, the numeric survey was conducted after the end of the semester and thus the students had already received their grades in the course. It is important to note that at this point, a disgruntled student could have used the survey as an opportunity to provide responses the opposite of what he or she perceived the experimenters desired. Second, experimenters could not associate the students' identities with their responses, thereby reducing the likelihood that an individual student would attempt to gain favor by responding to survey questions in a particular way. Third, if a demand effect was driving our results, we would expect that students would either provide very positive responses (e.g., all fives) or that students would provide the same response to every question (e.g., five across the board). Of all responses provided to

all questions, 33% were fives, while 39% were fours. We also examined the range of responses within student, measured as the difference between the highest score a student gave to any question minus the lowest score given to any question. Only one student gave the same answer to every question (i.e., range of zero). Seven students (9%) responded with a high score of 5 and a low score of 1 (i.e., range of 4). In total, 78% of students had a response range of at least 2.

We recognize that there are many ways to analyze the survey data. We believe that a one-sample *t* test comparison between the question mean and a neutral response, combined with students' written comments, effectively demonstrates the positive response to the learning exercise. Taken together, these follow-up survey design features and analyses provide support that student responses are representative of their true perceptions of the learning experience and are not solely attributable to an effort to provide experimenter-preferred responses.

The follow-up survey also posed two open-ended questions. When asked what suggestions they would provide for modifying the experience for future classes, many students suggested no changes. Among those who did suggest changes, the most common suggestion for change was to allow students to interview professionals in entities other than churches. One very interesting suggestion was that the students should write their own scripts and submit them to the professor for approval before conducting the interview. We believe this approach might be a good protocol for a second interview experience. Other suggestions were to shorten the interview process and to allow more improvisation on the part of the interviewer.

Students were also asked if they thought this type of interview experience would be useful in other classes. Ten students suggested the use of this type of experience in a management and organizational behavior class. The experience was also suggested for classes in business communications, economics, entrepreneurship, finance, human resources, and marketing. For example, a student in a human resources class might interview a church official about how the church conducts interviews, checks references, makes hiring decisions, and/or evaluates employee performance. A marketing student could interview a church official about the resources a church uses to make its presence known in the community, attract visitors, and build membership. Several students also commented that they felt the experience was useful in helping to prepare them for future job interviews.

Overall, these responses provide strong evidence that the purposes of our structured interview assignment were achieved. Responses to the open-ended questions provide strong evidence that students appreciated the activity, felt comfortable conducting the structured interview, and learned how accounting topics from the classroom applied to real-world scenarios, particularly in ways they may not have pre-

viously considered. We next provide some suggestions for expanding or altering how this type of learning activity could be adapted in the future.

## DISCUSSION AND EXTENSION

Results indicate that the assignment achieved experiential learning objectives, in that students agreed that they better understood the real-world applications of the concepts, that their interest in the topic area had been stimulated, and that they were more likely to retain what they learned from the experiment than they would from classroom learning activities. Students also agreed that they were comfortable with the assignment and that it increased their confidence level for future assignments.

Based on the experience of the instructors, we can offer a few recommendations for conducting successful experiential learning through a structured interview assignment. First, be careful to provide a low-anxiety, low-cost, high-benefit experience by creating a rich structured interview instrument. See the Appendix for an abbreviated example or contact us for the full instrument.

Second, encourage the students not to be apologetic in their approach to the interview. For example, the students can participate in a role play of the interview during class time. A role play can provide students with an expectation of what the experience will entail and how to behave during the interview process. It can also allow students the opportunity to ask questions or clarify items on the interview instrument before the actual interview occurs.

We also offer two extensions to this activity that could enhance student learning. In our study, we provided students with a complete interview instrument. Subsequent experiential learning activities could require students (individually, as a team, or as a class) to develop the interview instrument themselves. As students gain experience, they could also transition from structured to less-structured interviews during the course of the semester or the class series. Unstructured interviews allow for more student flexibility because questions could be changed or adapted to meet the respondent's intelligence, understanding, or other responses. Additionally, while this particular exercise was conducted in an accounting class, student responses to the follow-up survey indicate that it would be useful in other accounting and business classes and that it is useful in preparing them for future employment interviews.

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## APPENDIX—STRUCTURED INTERVIEW INSTRUMENT (ABBREVIATED)

### Religious Organization Managerial Accounting Procedures Survey

*This survey is being completed as part of a class project in < INSERT CLASS INFORMATION HERE >*

**If you have any questions during or after completing this survey, or if you would like to view the results of the survey, please contact: < INSERT INSTRUCTOR CONTACT INFORMATION HERE >**

**Directions to student:** Speak with an individual in a house of worship (e.g., church, meetinghouse, mosque, temple, etc.) who has some responsibility for financial oversight. This might be a religious leader, such as a bishop, Brahmin, minister, mullah, pastor, priest, rabbi, etc.; or it could be a layperson, office manager, head of a church board, etc. Obviously the positions can vary greatly with the size, theology, and nature of the institutions.

Please record below information about the religion and denomination of the house of worship that you visit:

Religion (circle one): Buddhist      Christian      Jewish      Hindu      Muslim      Other (explain)

Explanation for “Other”: \_\_\_\_\_

Denomination (e.g., Baptist, Catholic, etc.): \_\_\_\_\_

Here is the script you should use for your interview with this individual:

**Background Position:** Before we get started, it helps to get a little background information. Can you please tell me what your title or office is within this organization and explain the responsibilities of your position to me?

Title:

Responsible for (generally):

Specifically, what are your financial responsibilities in the organization?

What is your educational background?

What training (formal or informal) have you had in finance or accounting?

What experiences in the past have prepared you for your financial role in this organization?

### Background of the Organization

- How old is this organization? (We're referring to the specific church or temple at this location, not the religion or denomination.)
- Approximately how many members does it serve?
- Do you have a formal budgeting process each year?
- Who proposes the budget?
- Who approves the budget?
- What is the approximate size of your annual expense budget? \$ \_\_\_\_\_
- If the participant is uncomfortable or uncertain about the dollar amount of the budget, you can offer categories:
  - \$0 – \$250,000
  - \$250,000 – \$500,000
  - \$500,000 – \$750,000
  - \$750,000 – \$1 million
  - Over \$1 million
  - Prefer not to answer

### Controls in Place

Now let's discuss some controls that some religious institutions have.

- Do you have a code of conduct or code of ethics for individuals that have financial responsibilities in the organization? By this, I mean a specific set of behaviors or practices that are to be followed? (This is not to include behaviors or practices that are simply implied by your religious beliefs or sacred books.)

Circle one:

- We do have a code of conduct/code of ethics
- We had a code of conduct/code of ethics in the past but no longer have
- We have never had a code of conduct/code of ethics
- I wish we had a code of conduct/code of ethics

Additional comments:

- ***Ask these question only if they do have a code of conduct.***
  - To what positions does this code of conduct apply, i.e., who gets a copy of it?
  - Are individuals who are subject to the code of conduct asked to:
    - Read it regularly?
    - Sign it?
    - If so, how often are they asked to re-read it or re-sign it?

### Positions With Financial Responsibility

- What position in your organization is responsible for recording financial transactions?
- What position in your organization is responsible for *writing* checks?
- What position in your organization is responsible for depositing cash and checks that are received?
- To whom (what position) in the organization are bank statements mailed?



- Who reconciles the bank statements?
- Are any of the individuals that perform the preceding activities related to each other (e.g., husband / wife, father or mother / child, siblings)? If so, how are these individuals related?
- Are any of the positions that perform financial activities required to take a vacation each year? If so, which positions and for how long?
- Do any of the positions that perform financial duties have term limits? If so, how many years?
- Are any of the positions that perform financial duties rotated so that they do someone else's job for a period of time and someone else does their job? If so, explain.
- Describe the procedure that is followed to handle incoming cash, such as offerings (donations) from members.
- Do you have a board of directors (or other oversight board) that provides oversight to the organization?
- How often does the board meet?
- Are same-family relatives allowed on the board at the same time?
- Does the board receive reports on the organization's financial statements?
- If so, how often does the board get reports and who generates the reports?
- Are there individuals specifically selected to the board of directors because they have financial expertise? (If so, please describe how the selection occurs and the level of expertise necessary to hold this position.)

### Reporting Issues

- If an employee or volunteer in your organization were to suspect another employee or volunteer of unethical, illegal, or inappropriate activity with respect to your organization, what should that employee or volunteer do?
- Do you have any anonymous mechanisms through which an employee or volunteer could report suspicions of unethical, illegal, or inappropriate activity?

If so, please describe here:

- If you were certain that an employee or volunteer was taking cash, property, or information to which they were not entitled from your organization, what actions would you take?
- In the past five years, have you had any instances of an employee or volunteer taking cash, property, or information from your organization to which they were not entitled?

If so, please describe here:

What type of valuables were taken (cash, property, information, etc.)?

What was the approximate dollar value? \$ \_\_\_\_\_

- For how long was this individual taking things to which they were not entitled (in days, weeks, months, years, etc.)
- Was the responsible individual identified? (Yes/No)
- What consequences accrued to the responsible identified? (Check all that apply.)
  - Reprimanded
  - Terminated from paid job
  - Terminated from volunteer position
  - Terminated from participating in the organization in any capacity
  - Sued civilly
  - Required to pay restitution
  - Criminal prosecution
- If there was a civil suit, what was the outcome of that suit?
- If there was a criminal prosecution, what was the outcome of that case?

### Perceptions

How vulnerable do you think your organization is to illegal or unethical financial actions by employees or members?

- Not vulnerable at all
- Slightly vulnerable
- Vulnerable
- Very vulnerable
- Extremely vulnerable

Explain why you gave the response you gave.

If I wanted to truly understand controls in religious organizations, what questions should I have asked that I did not ask?

Is there anything else you would like to tell me about how your organization operates?



# Understanding Students' Attitudes About Group Work: What Does This Suggest for Instructors of Business?

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A survey was administered to college students to gain insight into their attitudes about classroom group work. Students responded that group work is generally a positive experience; however, they do not necessarily prefer it to individual assignments. Students' responses also indicated concerns about instructors' motivations for using group work, management of the process (or lack thereof) by instructors, free riding by teammates, and being accountable for the work of others. When comparing business and nonbusiness majors, some interesting, statistically significant differences are found. For example, business majors are more willing to be held accountable for the work of others and are more willing to terminate group members.

**Keywords:** classroom, cooperative learning, groups, students, survey, teams

Learning to work in a team environment is an important element of any business school curriculum—it forces students to focus on communication skills and project management approaches while highlighting the importance of a good work ethic. Teams combine people with different backgrounds and areas of expertise, applying each member's strengths. The result is that teams can create solutions that may not be accomplished without the full effort of the team (Katzenbach & Smith, 2005). Nevertheless, collaboration can be frustrating as well as fruitful. Students may have different ability levels, creating a source of stress for those who feel they are more capable, and group members may have different work ethics. Students also have trouble coordinating schedules and may not enjoy being with particular group members. Depending on the situation and how the process is managed, the outcome of group work might not be better than if team members worked individually.

Our own experience is that students are often resistant to group work, possibly due to perceptions of its effectiveness, their past experiences, or their assumptions of instructors' motives. We set out to learn more about the potential biases students have with respect to group work through a survey administered to undergraduate students. Our purpose was

twofold. First, we wished to gain more insight into students' attitudes about group work. Specifically, how do they think it should be designed, do they feel it is a valuable activity, and what are their perceptions about professors' motivations for using group work? Second, we wished to see if responses of business majors differed from nonbusiness majors in order to determine the implications for us as instructors of business.

The article proceeds as follows: we outline the related literature, present an overview of the survey and characterize the respondents. Then, we present a detailed analysis of survey results. Last, we offer a conclusion and discussion.

## LITERATURE REVIEW

### Cooperative Learning

Group work in the classroom is a form of cooperative learning, a technique that requires students to work together collaboratively and goes beyond mere active learning approaches in which students learn by doing. By working together toward a common goal, students develop more/better ideas and solutions, transfer learning across areas, spend more time on task, and are (together) actively involved in their learning. Because students are required to work with others, cooperative learning can help them build better relationships, leading to stronger interactions and contributing

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to higher self esteem (Johnson & Johnson, 1999). Over the past decade, cooperative learning has achieved greater acceptance and its use in the university classroom has increased (Johnson, Johnson, & Smith, 2007).

### Do Students Prefer to Work in Groups?

While the potential benefits of group work are well documented, do students like it? The answer is not so clear-cut. Phipps, Phipps, Kask, and Higgins (2001) concluded that while students have positive perceptions of some of the techniques of cooperative learning (individual accountability, interpersonal elements, small group skills, and group processing), they generally do not think it positively influences learning or increases study time. Machemer and Crawford (2007) explored three common teaching techniques (traditional teacher-centered learning, active learning where students learn by doing, and cooperative learning) and concluded that students liked whichever technique they felt would help them achieve the highest grade. They valued cooperative techniques the least, however, and they did not like being responsible to a group. Schultz, Wilson, and Hess (2010) collected from students written answers to an open-ended question about their preferences for group work. Students identified some of the benefits of group work to be a better product (more minds with more ideas), improved learning opportunities (learning from others), reduced workloads (work spread across more people), and collective security (tasks seemed less overwhelming when working together). But students also shared their concerns about giving up full control over their grades, free riding by others, and experiencing difficulties in setting up group meeting times. Bacon (2005) employed an experimental approach where groups of two undergraduate students in a consumer behavior course were compared with students who worked independently on an identical project. Follow-up survey responses indicated that students preferred to work individually and those who worked alone thought working in groups would have resulted in more work, not less. Hillyard, Gillespie, and Littig (2010) conducted survey-based research with undergraduate students and learned that bad group experiences led to long-lasting, negative attitudes about group work.

### Are Attitudes About Group Work Related to Academic Success?

It does appear that students' attitudes about group work are related to academic performance. Chapman and Van Auken (2001) found that the more academically successful students (higher grade point averages [GPAs]) tended to have less positive attitudes about group work. Students who were less academically successful (lower GPAs), on the other hand, had more positive attitudes about group work. Shaw, Duffy, and Stark (2000) also found this negative relationship between a student's preference for group work and GPA. Su

(2007) looked at individual student ability (students were ranked from low to high based on their grade point averages and grouped into high, medium, and low individual ability tertiles) relative to the ability of the rest of the team. Not surprisingly, students categorized as having a low level of individual ability had stronger preferences for team work when they were matched with students whose abilities were higher than their own. Combining students categorized as having medium individual ability or high individual ability with teams of medium or high performing members, however, did not change (positively or negatively) the preferences for team work. Rassuli and Manzer (2005) surveyed students in principles of economics courses who participated in cooperative learning activities built into the curriculum. An initial survey was used to divide the population into those who felt that their mastery of course content had increased and those who did not (eliminating neutral responders). Students who felt they had better mastered material had better attitudes about the class as a result of cooperative learning activities, citing improvement in performance, problem-solving skills, and ability to understand and articulate economic concepts. Students who felt their mastery decreased did not have a better attitude about the course and they indicated a preference for less group work and more lecture.

### What Internal Factors Affect Attitudes About Group Work?

Because group work requires students to communicate and interact with others, it seems logical that communication styles and personality might influence attitudes and perceptions. Myers et al. (2009) found that students' perceptions of the attributes of group work are linked to their own personalities and communication traits. In their study, undergraduate students were asked to rate themselves with respect to four personal attributes (tolerance for ambiguity, tolerance for disagreement, conversational sensitivity, and cognitive flexibility). The authors concluded that students were more likely to identify positive attributes of group work if they reported a greater ability to handle the potential for conflict between members, less discomfort with ambiguity, greater conversational abilities spanning multiple dimensions including comprehending what is said and how it is said, and more mental flexibility and open-mindedness. Students who were less able to cope with group work (not liking ambiguity and disagreement) and who were not flexible thinkers were more likely to identify negative attributes of group work, regardless of possessing conversational abilities.

Amato and Amato (2005) studied the relationship between students' communication styles and their perceptions of the team learning experience. Student groups were designed based on results of a Myers-Briggs Type indicator. Some students were put into groups with others who had compatible types (based on Yeakley two-way dyad scores)



in order to create an ease of communication (the compatible team treatment). Others were placed with students who did not have compatible types, so the same ease of communication was not expected (the complementary team treatment). The authors found that in an introductory economics class, compatible groups were more positive about the team experience. But in a marketing strategy class the reverse was true—complementary groups viewed the team experience more favorably. The authors suggested that this outcome could be tied to experience. The economics students were new to team work and may have found it easier to communicate with team members who were similar. The marketing strategy students had more experience with teamwork and were more likely to understand and take advantage of the benefits associated with the diversity offered by complementary teams.

Gottschall and García-Bayonas (2008) studied differences in attitudes toward group work among mathematics majors (light users of group work), education majors (heavy users), and business administration majors (medium users). While all three majors shared the same primary likes and dislikes related to group work, the authors found that business majors identified more negative aspects to group work. Education majors had the most positive overall attitudes.

Kaenzig, Hyatt, and Anderson (2007) concluded that gender has a role in shaping students' attitudes. In their study, women indicated more negative experiences with group work, citing feelings of being taken advantage of, pressure to offer favorable peer reviews, and responsibility for more of the secretarial tasks. In Chapman and Van Auken's (2001) previously discussed study, however, there were no differences in attitudes related to gender (or ethnicity). In an older study, Freeman (1996) found that female master of business administration (MBA) students got along with other group members better than their male counterparts and that they were more satisfied with the overall performance of the group. Female MBA students also reported more learning as a result of the group setting than men and a stronger feeling that team members could use each other to increase their own competence.

### Do Project Design Factors Influence Attitudes?

Many of the factors that shape students' attitudes about group work are related to the design of the project, something that can be influenced by the instructor. The surveys of Chapman and Van Auken (2001) revealed that students had a more positive attitude about group work and its benefits when the instructor was more active, helped the students understand group dynamics, used more group management techniques, and employed various evaluation methods (peer evaluations, meeting reports, and observation). Hijzen, Boekaerts, and Vedder (2007) studied effective and ineffective cooperative learning teams at a secondary vocational school in the Netherlands and found that the ineffective teams (those highly unsat-

isfied with their quality of cooperative learning) complained about the guidance offered by teachers (e.g., instructions unclear, not enough guidance offered, teachers not providing help when needed). Pfaff and Huddleston (2003) measured attitudes of senior undergraduate students who had recently experienced team work. Students in groups that did not experience shirking and that used peer evaluations rated the experience more favorably. Likewise, when more time was allotted in class to work on the project and when students thought that the team work load was fair, they rated the experience more favorably. Some of these same issues were noted in the previously discussed work of Schultz et al. (2010). Student responses to open-ended questions communicated concerns about shirking by others, the influence that others would have on their grades, and difficulties with setting meeting times.

Interestingly, the degree of homogeneity/heterogeneity in group membership does not appear to have a strong influence on attitudes about group work. Winter, Waner, and Neal-Mansfield (2008) studied teams of business majors that were homogeneously or heterogeneously grouped with respect to specific business disciplines (accounting, finance, marketing) to see if students' perceptions of teamwork in these two types of teams differed. They found that, in both types of groups, students fairly distributed the work load, experienced minimal conflicts, and worked together effectively. Teams grouped by discipline, however, found it easier to express ideas and they developed friendships more easily (although the authors admit it might be due to having other classes together and similar interests). Anderson (2005) studied groups of three students who participated in a four-week simulation. Anderson hypothesized that groups that were more cohesive (easily work together), less heterogeneous (less diversity in ideas), and more interdependent (work better with others than alone) would generate greater affect for the group project. Results suggested that cohesiveness and interdependence did increase affect. Heterogeneity, on the other hand, did not impact students' levels of affect, suggesting that the author's concern that diversity of ideas would result in greater conflict was unfounded.

There is no real consensus about whether or not students prefer to work individually or in teams—the results are truly mixed. Some of the research suggests that students do perceive the benefits of group work. They understand that it can enhance and increase learning, and lead to a better product. And when these benefits are received, students view group work more favorably. Other studies suggest that there is a large focus on the potential costs—unequal workloads, free riding by teammates, and difficulties coordinating in a group setting. When students experience these costs, they (understandably) have a negative attitude about group work that can be long-lasting. Some studies point to personality traits and conversational abilities of the individuals that influence the affect they have for group work. Other studies point to academic achievement as being an important factor, as well



as students' perceptions about their own learning and their performance on the assignment. There are even contradictory studies on the impact of gender on attitudes about group work.

What we take away from the literature is that there are no definitive answers. Students come to the table with their own set of experiences and their own attitudes about group work. As instructors, we must be in-tune with students' attitudes and perceptions of group work, understand how these attitudes relate to and influence team performance, and realize the role that we play in shaping them. This requires that we know more about the attitudes and perceptions of our students.

## MOTIVATION AND METHOD

The idea for this study came out of an unfortunate experience that ignited a dialogue within our business school. In the fall of 2008, one of the authors brought honor board charges against an unprecedentedly large number of students who had submitted group projects containing plagiarized sections. In each group, just one individual wrote the plagiarized section, but the group was ultimately responsible for the overall product. This led to conversations with students and discourse (sometimes heated) between colleagues. What struck us was that there was no consensus in opinions to key questions:

- Should students be accountable for each other's work in a group setting?
- What is a professor's responsibility related to providing students training on how to work effectively in teams?
- What is the best way to organize group work?
- Is group work even an effective strategy?

Armed with anecdotal information based on our own experiences (good and bad), the stories shared by students about their experiences (mostly negative) in other classes, and the comments from colleagues, we compiled a list of issues. We also armed ourselves with knowledge about best practices for group work, as identified in the literature. Not surprisingly, many of the concerns expressed by students and colleagues directly tied into best practices. For example, the literature suggests that free riding is limited by use of peer reviews. But how would students feel about trusting others in a peer review process? And should this information be used in grading? The dialogue with students and faculty and the resulting laundry list of issues and concerns became the basis for the survey employed in this study.

### Survey Design

We developed the survey to address five broad questions:

- What are students' preferences for how classroom group work should be organized?

- What are students' feelings about the value of classroom group work?
- What are students' perceptions about professors' motivation for using group work?
- What are students' experiences with classroom group work?
- What are students' overall opinions of classroom group work?

As faculty members in a business school, we also are interested in knowing whether business majors differ in their responses from nonbusiness majors. We saved the questions related to students' experiences for another study, allowing us to focus solely on students' attitudes about group work in this article. We also defer an analysis of attitudes as they relate to gender to a later investigation.

The survey instrument contained 73 questions divided into five sections. Twenty-nine questions relating specifically to students' experiences are not evaluated in this article and eight questions were used to collect demographic information. The remaining questions asked students about their preferences for how group work should be organized, their perceptions about faculty motives, and their overall impressions about the value of group work. All questions employed a 5-point Likert-type scale that ranged from 1 (*strongly agree*) to 5 (*strongly disagree*).

For efficiency, specific questions will be provided when results are detailed subsequently. The language that appears in tables reflects the exact wording employed in the survey. We have retained the original question numbers to reveal the order in which questions were asked. (The survey is available upon request.)

Prior to finalizing the survey, a small sample of students reviewed the instrument. We conducted cognitive interviews to obtain answers to the following questions: (a) Are any questions unclear?; (b) Are there any questions for which an acceptable answer does not exist?; (c) Are there any topics related to group work that should have been included but are not?; and (d) How long did the survey take to complete? Based on those interviews we deemed the instrument acceptable, however, a minor change was made to the wording of one question. Responses from students involved in the cognitive interviews were not included in the dataset. A colleague with substantial expertise on survey techniques provided guidance on administering the instrument.

### Demographics of Survey Samples

In spring 2009, we administered the survey to students at our university, a mid-sized state institution that prides itself on a low teacher-student ratio and high quality instruction. Because we wanted to survey upperclassmen, we targeted upper level business courses as well as a 400-level English class required for all students.



TABLE 1  
Demographic Makeup of Students Surveyed

	Pooled	Business	Nonbusiness
Number of observations	411.00	153.00	258.00
% Juniors	45.00	16.30	62.00
% Seniors	55.20	83.60	38.00
% Full-time work experience	21.30	26.10	18.60
% Men	40.00	62.10	27.10
Average age (years)	21.35	21.33	21.18
Average grade point average (4-point scale)	3.00	2.82	3.04
% with three group experiences	0.882	0.928	0.767

We administered surveys in the classroom setting to eight business classes (average enrollment of 22.4 students) and 19 English classes (average enrollment of 19.1 students). The response rate (relative to enrollment) was 85% in business and 71% in English. It should be noted that some students appeared in both a business class and an English class, but they were asked to complete the survey only once. Because business classes received the surveys several days before English classes received them, this reduced the response rate in the English classes (some students had already completed the survey). After culling incomplete surveys, we ended up with 411 responses.

Table 1 details the demographic breakdown for the overall dataset and for the business and nonbusiness samples. Of the 411 students, 37.2% indicated that their major was housed in the College of Business & Economics. The remaining 62.8% indicated majors housed in the College of Liberal Arts & Sciences or in the College of Education & Human Services. Interestingly, the business sample reflected a greater proportion of seniors, but average age is almost the same when comparing business and nonbusiness (we only found students over the age of 27 years in nonbusiness dis-

ciplines). The business sample reflected a greater proportion of males, students with full-time work experience, and lower self-reported grade point averages. Over 88% of the students surveyed indicated that they had had three group work experiences (reported by 93% of business students and 77% of nonbusiness students). Everyone had had at least one group experience.

It is likely that nonbusiness courses generated the experiences of nonbusiness majors. At our institution, there are very few nonbusiness curricula that require business courses, and generally those that do are limited to introductory subjects (most often economics) that do not use group work. It is also likely that the experiences of business majors come mainly from their business classes. Students studying business take general education courses that do not employ much group work (e.g., mathematics, history, English). Business courses, however, often employ group work; business majors also have relatively few electives for courses outside of business.

## RESULTS

### Part 1: Students' Perception of Motivation for Group Work

A fundamental issue that might impact the success of group work is students' perceptions of why faculty members use it. Table 2 includes questions that addressed potential motives for using teamwork. Items ranged from teamwork being a way to reduce professor grading to being a strategy for job preparation. Question means are reported for the full dataset, for business students, and for nonbusiness students in the tables (and in parentheses in discussions) based on the scale described above. We also report *t* tests for differences in the business and nonbusiness sample means.

TABLE 2  
Students' Perception of Motivation: Test for Difference in Mean Responses

Item	Pooled		Business		Nonbusiness		<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
(18) Professors use group work to reduce their grading responsibilities.	3.21	1.08	3.16	1.09	3.24	1.07	-0.76
(19) Learning to work in a group is an important skill.	1.45	0.70	1.43	0.71	1.46	0.70	-0.35
(20) Employers value individuals who can work effectively in a team environment.	1.33	0.61	1.36	0.73	1.32	0.52	0.71
(21) Ability to work independently is more valuable than the ability to work in a group or team.	3.24	0.89	3.19	0.95	3.26	0.84	-0.86
(22) Ability to work in a team environment is as important as mastery of a specific field of study.	2.30	0.99	2.37	1.00	2.26	0.98	1.07
(23) Group work in the classroom is similar to group work in a professional business setting.	2.45	1.10	2.47	1.11	2.45	1.10	0.22
(24) Group work in the classroom does a good job of preparing me for group work in a professional business setting.	2.26	1.02	2.20	1.00	2.29	1.03	-0.91

Note. Tests performed under the assumption of equal variances. The results are the same if assuming unequal variances.

We were relieved to find that students generally perceived group work to be important. In items 19 and 20, the mean response fell between strongly agree and mildly agree when evaluating if learning to work in a group is an important skill ( $M = 1.45$ ,  $SD = 0.70$ ) and one valued by employers ( $M = 1.33$ ,  $SD = 0.61$ ). Students were closer to neutral in their mean response when asked in item 21 if ability to work independently is more valuable than the ability to work in a group ( $M = 3.24$ ,  $SD = 0.89$ ). The mean response fell between neutral and mildly agree for items 22–24, that it is as important as mastery of a specific field of study ( $M = 2.30$ ,  $SD = 0.99$ ), that it is similar to what they will see in the business setting ( $M = 2.45$ ,  $SD = 1.10$ ), and that it is good preparation for group work on the job ( $M = 2.26$ ,  $SD = 1.02$ ). Results of  $t$  tests show no significant differences between the mean responses of business majors and nonbusiness majors for any of the seven questions.

We can conclude that students come to the table already appreciating the benefits of having group work experience. As long as they feel instructors are employing group work to promote these benefits, we should have some level of student support. The results from item 18, however, suggest an area of concern. In this item, we asked students to indicate their level of agreement with the statement Professors use group work to reduce their grading responsibilities. The mean response of 3.21 ( $SD = 1.08$ ) suggests students were somewhat close to neutral in their opinions. The data are more alarming when looking at the distribution of responses, as illustrated in Figure 1. Note that because the sizes of the business and nonbusiness samples are unequal, the data are expressed in terms of percentage of respondents and not the number of respondents (true for all graphs presented).

Over 25% of business majors and over 23% of nonbusiness majors agreed (either strongly or mildly) that group work is used to reduce faculty workloads. Just over 34% of each group answered neutrally. Only 41% of students felt that professors do not use group work to reduce their grading. Professors may have this student perception as a hurdle to overcome if group assignments are to be received well.

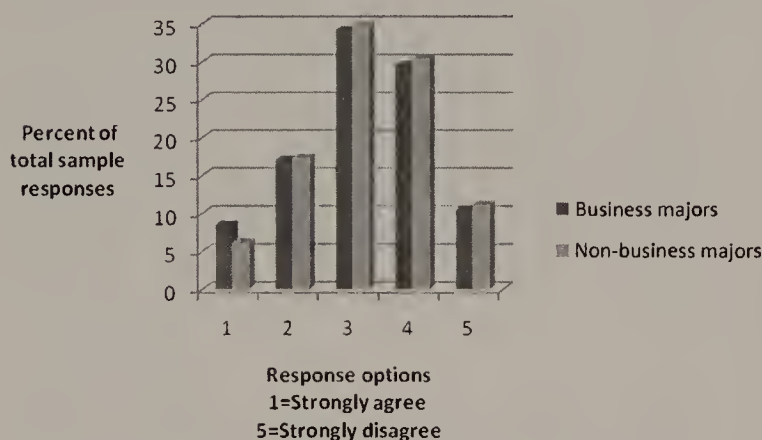


FIGURE 1 Distribution of responses: professors use group work to reduce grading (item 18).

We need to do a better job of motivating why particular assignments lend themselves to a team arrangement, focusing on the benefits of collaboration and the brain storming process. It is necessary to be careful not to use group work if collaboration does not really enhance the learning process, improve the end product, or provide some other benefit.

## Part 2: Questions Addressing Student Preferences

It is not surprising to learn that students have their own views on how group work should be organized. We collected responses for 17 questions addressing size and composition of groups, leadership, peer reviews, grading, accountability, member termination, and upfront education by instructors. We asked students to respond using the same scale employed in the previously discussed questions.

Table 3 reports survey results for the pooled dataset, the business sample, and the nonbusiness sample. The following discussion is based on mean responses and we analyzed particularly interesting results more fully. We provide the results of  $t$  tests for differences in means for the business and nonbusiness samples.

Pooled results in item 1 show that students were interested in selecting their own group members ( $M = 1.92$ ,  $SD = 1.08$ ). In item 2, the mean response fell between neutral and mildly disagree when students considered the idea of grouping students by abilities ( $M = 3.69$ ,  $SD = 1.11$ ). We expected that students with higher GPAs would be more in favor of homogenous groupings because they would be placed with others who were academically successful. For a similar reason, we expected lower GPA students to be less in favor of this homogeneous grouping. Surprisingly, there was little evidence of this relationship. As it turned out, GPA and a preference for grouping by ability were very weakly correlated (.030).

Items 3 and 4 are aimed at determining students' preferences for keeping groups intact for repeated assignments. The question was asked in two opposite ways. When asked their attitudes about reassigning groups between assignments (item 3), students' mean response was 3.14 ( $SD = 1.19$ ; close to neutral but leaning just slightly toward mildly disagree with being reassigned). When asked their attitudes about keeping groups intact for repeated assignments (item 4), students' mean response was 2.72 ( $SD = 1.15$ ; leaning slightly toward mildly agree with keeping groups together). The results on these two items are similar but are not perfect mirror images of each other (keep in mind a 1 for question 3 is comparable to a 5 for question 4); both results suggest a mean response close to neutral but leaning just slightly toward wanting to keep groups intact. Also note that the two items can be combined after inverting one set of responses to generate a composite mean response. In this case it is 3.21 and would be interpreted in the same manner as question 3. Interestingly, business majors show more reluctance



TABLE 3  
Students' Preferences: Test for Difference in Mean Responses

Item	Pooled		Business		Nonbusiness		<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
(1) I prefer to select my own group members (as opposed to the professor assigning them).	1.92	1.08	2.03	1.19	1.86	1.01	1.53
(2) I believe that students should be grouped by abilities (strong students together, weaker students together).	3.69	1.11	3.67	1.13	3.70	1.09	-0.26
(3) If there is going to be more than one group project, teams should be reassigned each time.	3.14	1.19	3.46	1.13	2.96	1.18	4.19**
(4) If there is going to be more than one group project, teams should remain together for all.	2.72	1.15	2.43	1.10	2.89	1.14	-3.98**
(5) Professors should assign a group leader.	3.53	1.11	3.47	1.10	3.56	1.11	-0.83
(6) Professors should require the group to select a group leader.	2.78	1.19	2.48	1.09	2.95	1.21	-3.86**
(7) Professors should let groups decide whether or not they need a group leader.	2.42	1.06	2.51	1.07	2.36	1.04	1.33
(8) Foreign students with weaker language skills should be grouped together in their own group.	3.83	1.20	3.48	1.37	4.04	1.03	-4.72**
(9) Smaller groups (2-3 people) are preferable to larger groups (4-6 people).	2.16	1.04	2.32	1.03	2.06	1.03	2.50*
(10) The professor should ask us to complete a peer review to evaluate the other group members.	2.03	1.87	1.92	1.09	1.99	1.05	-0.67
(11) I trust other group members to evaluate me fairly in a peer review.	2.13	0.96	2.16	1.00	2.11	0.94	0.48
(12) Professors should use the feedback in peer reviews when determining our grades.	2.26	1.09	2.23	1.07	2.28	1.09	-0.42
(13) Every member of a group should receive the same grade.	3.84	1.11	3.77	1.13	3.89	1.10	-1.03
(14) I should be held accountable for errors made by other group members.	3.84	1.15	3.64	1.20	3.96	1.10	-2.76**
(15) My grade should reflect only the portions of the project that I completed.	2.74	1.10	2.84	1.01	2.69	1.14	1.36
(16) Groups should have the right to terminate members who do not do their share.	2.16	1.12	1.75	0.93	2.41	1.16	-6.07**
(17) Professors should teach us how to work in groups effectively before projects are started.	2.50	1.08	2.49	1.06	2.51	1.09	-0.21

Note. Tests performed under the assumption of equal variances. The results are the same if assuming unequal variances.

\* $p < .05$ . \*\* $p < .01$ .

than nonbusiness majors to being reassigned when items 3 and 4 are explored separately, for item 3,  $t = 4.19$ , for item 4,  $t = -3.98$ ,  $ps < .01$ . Results in items 5 and 6 showed less disagreement with requiring the group to pick a leader ( $M = 2.78$ ,  $SD = 1.19$ ) than the professor assigning a leader ( $M = 3.53$ ,  $SD = 1.11$ ). While the preferences associated with any designation of a leader were not strong, business majors were marginally more agreeable to being told to select a group leader by the professor (for business:  $M = 2.48$ ,  $SD = 1.09$ ; for nonbusiness:  $M = 2.95$ ,  $SD = 1.21$ ;  $p < .01$ ).

Students' mean response fell between neutral and mildly disagree for item 8 concerning grouping English as a second language students with weaker language skills together ( $M = 3.83$ ,  $SD = 1.20$ ). Nonbusiness majors showed more disagreement than business majors with the idea of segregating foreign students in this way (4.04 [ $SD = 1.03$ ] vs. 3.48 [ $SD = 1.37$ ]),  $t = -4.72$ ,  $p < .01$ . In item 9, students mildly agreed that smaller groups of 2-3 people are preferable ( $M = 2.16$ ,  $SD = 1.04$ ) with nonbusiness majors showing more support for smaller groups than business majors,  $t = 2.50$ ,  $p < .05$ .

Grading is an issue that resonates with students, and it is one that requires a lot of thought on the part of professors who use group work. When evaluating the product of group work, should professors grade the team as a whole? Or, should they factor in some individual component so that grades are not always identical for all members? And if so, on what basis should they grade an individual's contribution? In this survey, students do indicate some desire to be judged on their own merits. In item 13, students' mean response fell between neutral and mildly disagree related to the idea of group members receiving the same grade on a group project ( $M = 3.84$ ,  $SD = 1.11$ ). This is consistent with the results of item 15 where responses fell in between neutral and mildly agree related to the idea of being graded only on the portions of the work completed by the individual ( $M = 2.74$ ,  $SD = 1.10$ ).

For professors who do want some individual accountability, peer reviews in which students evaluate each other are an option. Student responses showed some support for peer review processes. In items 10 and 11, students' mean

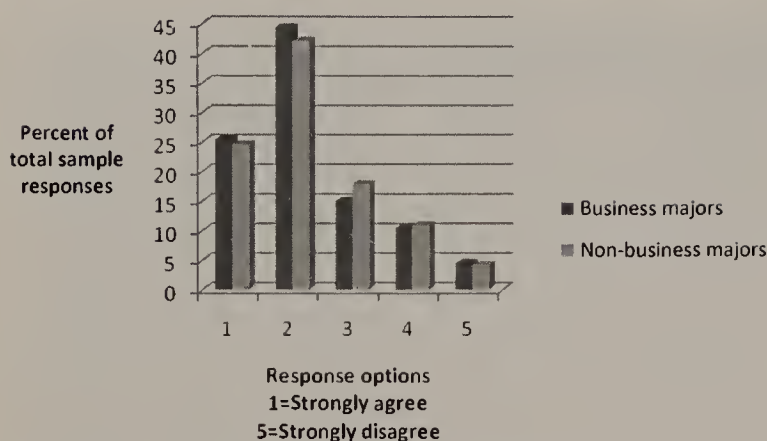


FIGURE 2 Distribution of responses: should professors use peer reviews in grading (item 12).

responses fell close to mildly agree when asked if professors should require students to do peer reviews ( $M = 2.03$ ,  $SD = 1.87$ ) and if they trusted other students to judge them fairly ( $M = 2.13$ ,  $SD = 0.96$ ). In item 12, students' mean response fell in between neutral and mildly agree when asked if professors should use peer review feedback in grading ( $M = 2.26$ ,  $SD = 1.09$ ). In fact, 68% of all students agreed (strongly or mildly) that peer reviews should be incorporated into grading and only 15% of students disagreed (strongly or mildly). Figure 2 illustrates the distribution of responses for item 12 and it should be noted that the distribution is similar when comparing business and nonbusiness majors.

Furthermore, whether students had experienced a peer review process was not a driving factor in student responses to this question. There was a .179 correlation between having experienced peer reviews and agreeing that others could be trusted in a peer review process. And there was a .165 correlation between having experienced peer reviews and agreeing that peer reviews should factor into grading.

Peer reviews have their benefits. They can create an incentive that reduces shirking, especially when students are informed upfront that a peer review will take place. But it is important to balance this individual accountability with the group accountability. Ultimately, teams must be responsible for the quality of the end product. Our own experience is that students have a hard time appreciating this level of accountability and survey results offer concurring evidence. In item 14, we asked students to indicate their level of support to the statement I should be held accountable for errors made by other group members. The mean response was 3.84 ( $SD = 1.15$ ) with 67% of all students reporting that they disagree (strongly or mildly) with being held accountable in this way. More than half of the students who disagreed indicated that they strongly disagreed. Some interesting differences between business and nonbusiness students are evident in Figure 3.

When comparing the mean responses of business majors ( $M = 3.64$ ,  $SD = 1.20$ ) versus nonbusiness majors ( $M = 3.96$ ,  $SD = 1.10$ ), business majors were, on average, in less

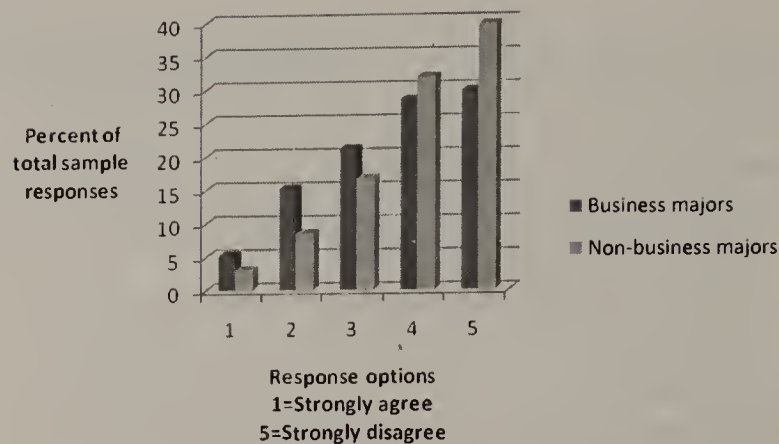


FIGURE 3 Distribution of responses: should students be accountable for errors of others (item 14).

disagreement with being held accountable for the work of others,  $t = -2.76$ ,  $p < .01$ . It turns out that 21% of business majors indicated agreement (strong or mild) with being held accountable for the mistakes of others. The proportion of nonbusiness majors who responded in the same way was only 12%. We question whether this is a result of selection bias related to choice of major or whether the business school better communicated expectations for teams (possibly through class content related to teams or through visiting practitioners who reinforced the idea of effective teamwork). This is an interesting area for further research. Regardless of the reason, the result suggests that business faculty may have less of a battle to face when employing evaluation approaches that make the entire team responsible for the quality of the end product.

There are important reasons why faculty members may want to hold an entire team responsible for the quality of its product. But how do we handle a situation in which a particular individual's behavior detracts from the process and the end product? Peer reviews can be used to punish an individual student, but all team members will be penalized if the end product suffers. Thus, some professors implement a termination policy and we admit to using such a policy ourselves. Our own experience is that students are willing to terminate others in order to protect the quality of their group work. Interestingly, survey results were consistent with our own observations. Item 16 asked students to indicate their level of agreement with the statement "Groups should have the right to terminate members who do not do their share." The mean response was 2.16 ( $SD = 1.12$ ), indicating mild agreement. But as Figure 4 illustrates, this was somewhat driven by the population of business majors who showed more agreement with termination,  $t = -6.07$ ,  $p < .01$ .

Over 45% of business majors strongly agreed with having the right to terminate a group member. Only 24% of nonbusiness majors gave this same response. When combining strongly agree and agree it turned out that 86% of business students agreed with termination, compared with 62% for nonbusiness majors. The variance in answers addressing the



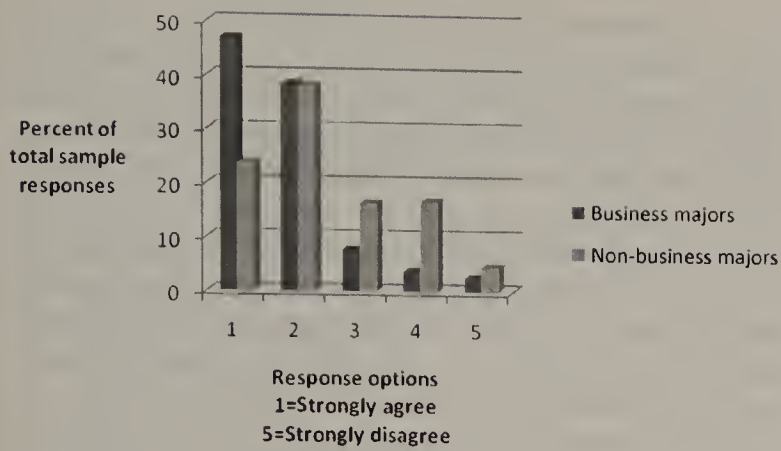


FIGURE 4 Distribution of responses: groups should have the right to terminate members (item 16).

right to terminate group members, however, was higher for business majors, indicating less agreement among business students surveyed.

We fully expected that students who had experienced others shirking would be more in favor of having the right to terminate others. This relationship was confirmed to a degree, with a correlation of .179. We also expected higher achieving students (measured by GPA) to be more in favor of termination, since these students may be protective of their good grades and may be less likely to shirk. Instead, we found a correlation of  $-.010$  between GPA and attitude about termination.

While peer reviews and termination policies may help improve individual accountability to the group, an important concern may be that students need to be taught how to work in a team setting. We included item 17 to gauge student reaction to having professors teach about effective team work before initiating group projects ( $M = 2.50$ ,  $SD = 1.08$ ). It turns out that 52% of all students supported the idea and less than 17%

of students did not. This is an idea that we will be exploring more in our own classrooms.

### Part 3: Students' General Assessments of Group Work

We asked students to provide their general assessment of working in a team environment based on 12 items. The questions employed the same scale as described above. Table 4 reports the mean of responses for the entire dataset and then the business and nonbusiness samples.

Item 54 asked students to indicate whether they preferred to work in teams or groups (as opposed to working independently). The average response for both business and non-business majors was just below and just above neutral (2.86 [ $SD = 1.23$ ] vs. 3.10 [ $SD = 1.32$ ]),  $t = -1.84$ ,  $p < .10$ . Figure 5 shows business majors' responses skewed more in favor of group work than the sample of nonbusiness majors. The percentage of business majors illustrating a preference (either strongly or mildly agreeing with the statement) for working in teams was 45% and for nonbusiness majors was 37%. On the other end of the distribution, nonbusiness majors indicated a stronger preference for working individually than did business majors (42% vs. 29%).

It was our assumption that high achieving students would be less inclined to work in groups (and vice versa). Results show this to a degree. There was a .220 correlation between GPA and the question asking for preference related to working in a group (note that higher GPA correlated with not wanting to work in a group). Interestingly, mean responses ranged between neutral to mildly agree for questions addressing whether group work resulted in better mastery of material (item 55:  $M = 2.95$ ,  $SD = 1.06$ ), whether they learned more in a group setting (item 62:  $M = 2.87$ ,  $SD = 1.20$ ), and

TABLE 4  
Students' Overall Evaluation of Group Work: Test for Differences in Mean Responses

Item	Pooled		Business		Nonbusiness		<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
(54) I prefer to work in a group or team on class projects, as opposed to working independently.	3.01	1.29	2.86	1.23	3.10	1.32	-1.84 <sup>†</sup>
(55) Working in a group results in better mastery of course material.	2.95	1.06	2.95	1.03	2.94	1.08	0.11
(56) Group work benefits my course grade.	2.67	1.04	2.66	0.99	2.68	1.08	-0.16
(57) I enjoy working in groups in my classes.	2.57	1.17	2.57	1.09	2.58	1.21	-0.05
(58) Group work should be used more often in classes.	2.79	1.13	2.75	1.08	2.82	1.16	-0.57
(59) I find classroom group work socially rewarding.	2.44	1.04	2.46	1.05	2.43	1.03	0.25
(60) In general, groups work effectively.	2.24	1.01	2.15	0.93	2.30	1.07	-1.41
(61) In general, group members fairly share the workload.	2.74	1.11	2.66	1.05	2.78	1.14	-0.96
(62) In general, I learn more working in a group than if I work alone.	2.87	1.20	2.84	1.21	2.89	1.19	-0.43
(63) In general, the group process is managed well by the professor.	3.00	1.06	2.95	1.03	3.02	1.06	-0.66
(64) In general, the grading process is fair.	2.56	0.95	2.54	0.92	2.57	0.97	-0.27
(65) In general, group work is a positive experience.	2.24	1.01	2.14	0.95	2.30	1.05	-1.51

Note. Tests performed under the assumption of equal variances. The results are the same if assuming unequal variances.

<sup>†</sup> $p < .10$ .

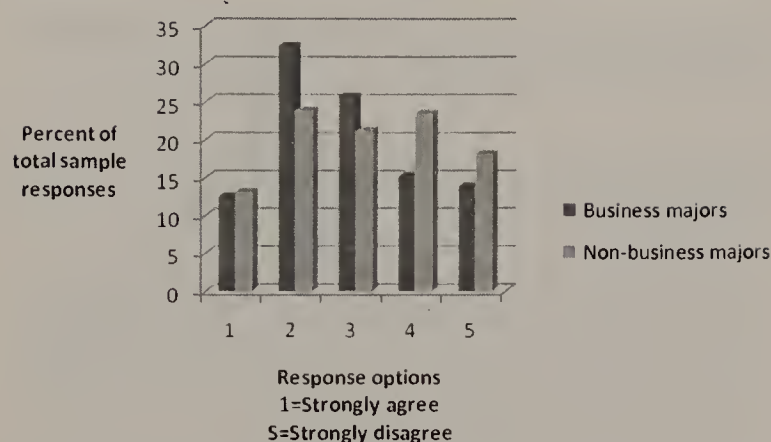


FIGURE 5 Distribution of responses: I prefer to work in a team (item 54).

whether group work should be used more in the classroom (item 58:  $M = 2.79$ ,  $SD = 1.13$ ).

A series of questions attempted to capture a general attitude related to desirability and effectiveness of group work. The mean response was in between neutral and mildly agree for group work: benefitting grades (item 56:  $M = 2.67$ ,  $SD = 1.04$ ), being enjoyable (item 57:  $M = 2.57$ ,  $SD = 1.17$ ), being socially rewarding (item 59:  $M = 2.44$ ,  $SD = 1.04$ ), and involving a fair grading process (item 64:  $M = 2.56$ ,  $SD = 0.95$ ). Not surprisingly, these items were highly correlated with the preferences for working in groups indicated in item 54. Stronger preferences for working in groups (as opposed to independently) had a correlation of .760 with group work being enjoyable, a correlation of .630 with group work benefitting students' grades, and a correlation of .520 correlation with group working being socially rewarding.

Students' mean response fell between neutral and mildly agree for item 61, which asked if group members fairly share the workload ( $M = 2.74$ ,  $SD = 1.11$ ). The distribution of responses illustrated in Figure 6 is quite telling.

Fifty-six percent of business students and 49% of nonbusiness students agreed (strongly or mildly) with the statement that workloads are shared fairly, leaving 24% of business majors and 31% of nonbusiness majors who indicated (strongly

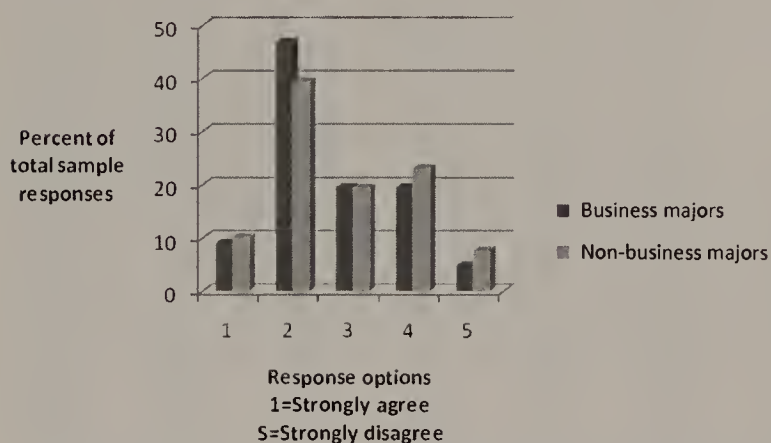


FIGURE 6 Distribution of responses: group members fairly share the workload (item 61).

or mildly) that this is not the case. There was a correlation of .150 between feeling that groups do not share workloads fairly and wanting required peer reviews. There was a correlation of .510 between feeling that groups do not share workloads fairly and feeling that professors do not manage group work well.

One result worth highlighting is item 63—whether the process was well managed by the professor. The mean result was 3.00 ( $SD = 1.06$ ), showing neutrality in average opinion. The distribution of responses illustrated in Figure 7 gives cause for concern.

Only 32% of all respondents agreed (strongly or mildly) that group work was managed well by professors. The same percentage of students indicated that they disagreed (strongly or mildly), suggesting that they felt group work was not well managed. Clearly there is great room for improvement in how we, as instructors, manage group work in the classroom, whether we provide clearer instructions, better monitor group performance during the course of the activity, or work harder to prevent shirking. The results suggest an area of further investigation aimed at learning how students perceive the team process to be best managed by their professors.

Despite the areas of concern indicated in some of the previous questions, students' mean responses were favorable for questions asking if groups work effectively (item 60:  $M = 2.24$ ,  $SD = 1.01$ ) and if group work is a positive experience (item 65:  $M = 2.24$ ,  $SD = 1.01$ ). Of the entire sample, 71% of students reported that they felt groups work effectively (only 13% disagreed); 68% reported that group work has been a positive experience (only 11% disagreed). Furthermore, there were no statistically significant differences in mean responses for any questions in this section when comparing business and nonbusiness students. So, while the two groups of students sometimes had different ideas about the specifics of group work, their overall assessments of group work were similar and relatively favorable. Average responses, however, suggest that neither favored group work over working independently.

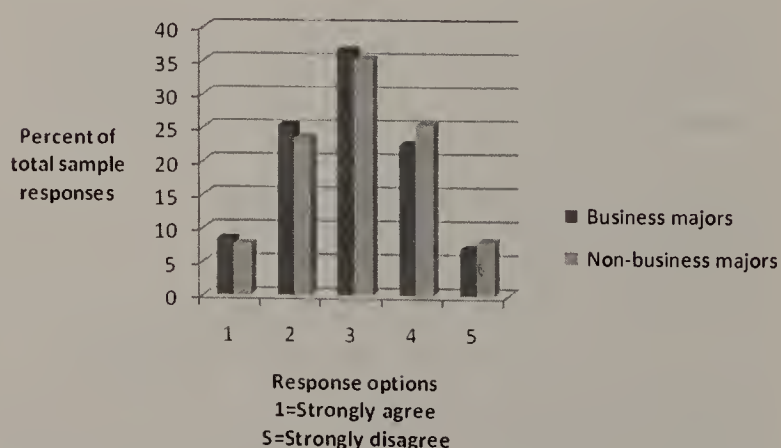


FIGURE 7 Distribution of responses: group process is managed well by the professor (item 63).



## DISCUSSION AND CONCLUSION

We started this research project with the premise that knowledge of students' perceptions and attitudes about group work would enable us to motivate and design cooperative learning activities better. Results suggest that students generally understand the motivation for group work—they see it as an important skill that is valued by employers. Nevertheless, they are not convinced that instructors are primarily motivated by this when making decisions to assign group work. Instead, results show that many students believe professors use group activities to reduce their grading responsibilities.

Students indicated preferences for how group work is organized by professors. They showed some interest in being able to select their own groups, but they were not in favor of grouping students by abilities. Surprisingly, there was little correlation between GPA and interest in grouping by abilities. We had expected higher achieving students to be more interested in these types of homogeneous groupings (and lower achieving students less interested), but we found no strong relationship. If a group leader was required, students were more in favor of being able to pick the individual as opposed to the instructor assigning a leader. Students preferred smaller groups (2–3 members) to larger groups (4 or more members), with nonbusiness majors showing more support for smaller groups than business majors.

Regarding issues related to grading, students were concerned with being held accountable for the errors made by others, although business majors were more willing than nonbusiness majors to be held responsible. Students generally leaned toward wanting an individual grade as opposed to a uniform group grade. They showed substantial support for the use of peer reviews and their incorporation into the grading process, with students indicating that they trusted others to judge them fairly. They generally supported the right to terminate group members who shirked, with business majors showing stronger support than nonbusiness majors. Interestingly, we expected a highly positive correlation between grade point average and supporting the right to terminate other members, under the assumption that high achieving students are more protective of their grades. We did not find this to be the case. In addition, having experienced shirking by others in a group had a weak correlation with support for the right to terminate others. While peer reviews and termination can reduce shirking, the real issue may be that students do not know how to work together effectively, with training being the best solution. Survey respondents showed mild support for having professors teach about effective team practices prior to the start of a group project.

In general, there was no consensus concerning a preference for group work. Some students showed a preference for group work and similar proportions of students showed a preference for working independently. We also expected a strong correlation between students' grade point averages and a desire to work independently. Instead we found a weak

correlation. Students who indicated a preference for working in groups also felt that it benefited their grade, that it was enjoyable, and that it was socially rewarding. Students also generally indicated that workloads were shared fairly by team members. While students did not show an overwhelming preference for working in groups, they generally reported that group work is a positive experience and that groups work effectively. There were no significant differences between business and nonbusiness students when it came to these summary questions.

Understanding our students' attitudes and perceptions regarding group work provides insight that can help educators develop more effective cooperative assignments. As instructors of business, we see a need for our students to understand and master cooperative learning techniques so they can use the strength of synergy to develop a better product, enhance their own learning, and prepare for the realities of how they will be expected to work in the business setting. And by taking student attitudes into consideration when we design and use group activities, we should be able to influence positively our students' responses to group work in order to achieve greater learning and better outcomes. At the same time, we must balance a desire to satisfy students' preferences with our own goals and objectives for student learning.

One particularly important point for all instructors is that we have to choose carefully when cooperative learning will be utilized, and we should clearly explain why a particular assignment lends itself to a cooperative approach. Instructors should design group assignments so that they require collaboration and synergistic thinking for their successful completion. If students could complete the work just as successfully (and perhaps efficiently) by themselves, then it may not be a useful time to employ the cooperative approach.

It is not surprising that students want to select their own teammates and choose their own group leader when one is required. When this preference is consistent with our own objectives, we might improve student buy-in by using self-selection for creating teams. We might, however, have reasons for designing teams in a particular way, perhaps to create teams with diverse backgrounds (for example, not having all of the finance students in one group and the marketing students in another). It might make sense for us to explain the composition of groups when they are designed by us as instructors. Furthermore, when possible and only when consistent with our teaching objectives, we might try to accommodate the students by assigning smaller group sizes.

We were not surprised to learn that students have clear preferences and attitudes related to grading. Students do not want to feel that their own grade may be jeopardized by the lack of work ethic or abilities of teammates. The purpose of a cooperative assignment, however, is to pull together the strengths of teammates in order to create a result that is better than what would be produced individually. This requires that teams be held accountable for their overall product, regardless of each individual's contribution. This is where finding

the appropriate balance may prove difficult. Therefore, we suggest using a combination of inputs to determine each student's grade. Grading the overall product as a whole sends the message that the team is accountable for the quality of its work. The results of this research, however, show that students are supportive of the use of peer evaluations—they trust others to evaluate them fairly and they want peer evaluations factored into the individual member's grade. Therefore, professors might consider a hybrid grade that is based on the output of the group while also considering each student's contribution to the team. In this sense, it is a win-win. Students may feel more comfortable when there is a penalty for shirking and the group outcome is still a major focus. Professors might also consider a termination policy, because students are supportive of that approach as well. Our own experiences suggest that termination policies should have clear ground rules about when and how they are to be applied.

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# Differential Gender Performance on the Major Field Test–Business

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The Major Field Test in Business (MFT-B), a standardized assessment test of business knowledge among undergraduate business seniors, is widely used to measure student achievement. Many previous studies analyzing scores on the MFT-B report gender differences on the exam even after controlling for student's aptitude, general intellectual ability, and motivation. The authors' results point to two reasons behind this phenomenon. First, it is important to control for critical thinking abilities while explaining variation in MFT-B scores. Second, motivation to perform well on the test varies between genders and high- and low-performing students.

**Keywords:** assessment of learning, critical thinking, gender differences, MFT-B, quantile regression

The Major Field Achievement Test in Business (MFT-B) is a widely used assessment of learning instrument intended for use with graduating seniors in postsecondary undergraduate business programs. The primary motivations for administering the test are typically related to general assessment of learning and curriculum development efforts and to offer external accrediting bodies, such as the Association to Advance Collegiate Schools of Business (AACSB), evidence that a program is fulfilling or making progress toward its stated mission. Martell (2007) reported that in 2006, 46% of business schools used the MFT-B instrument in their assessment of students' learning. The Educational Testing Service (ETS), the publisher of the instrument, reported that 132,647 individuals at 618 different institutions completed the MFT-B between 2005 and 2009 (Educational Testing Service, 2009). The ETS describes the instrument as designed to measure a student's knowledge and ability to apply significant facts, concepts, theories, and analytical methods related to business. The questions represent a wide range of difficulty, and the assessment attempts to cover both depth and breadth in assessing students' levels of achievement (Educational Testing Service, 2010). The test contains 120 multiple-choice items covering a common body of knowledge typical of undergraduate business education: accounting (15%), management

(15%), economics (13%), finance (13%), marketing (13%), quantitative business analysis (11%), information systems (10%), legal and social environment (10%), and international issues (about 12% drawn from other content areas; Educational Testing Service, 2010). The scores range from 120 to 200 and the ETS reports the mean score to be 153.5 with a standard deviation of 13.7 for 2010–2011 (Educational Testing Service, 2011).

The MFT-B has attracted the attention of researchers seeking to identify the determinants of student performance on this widely used assessment. Standardized test scores (ACT/SAT), grade point average (GPA), majors field of study, and gender have been consistently cited as determinative covariates (Bielinska-Kwapisz, Brown, & Semenik, 2012a, 2012b; Black & Duhon, 2003; Bycio & Allen, 2007). This study extends the research stream by further and specifically examining the size and heretofore, unexamined nature of reported MFT-B performance differentials attributed to gender.

Gender, specifically male advantage, has been reported in several studies of performance on the MFT-B. Bielinska-Kwapisz et al. (2012a) reported that men perform better than women by 4.33 points after controlling for ACT scores, GPA, and an offer of extra credit for performance. Mason, Coleman, Steagall, Gallo, and Fabritius (2011) reported a 4.9-point male advantage on the MFT-B while controlling for GPA, SAT, age, transfer, race, and major; while Bagamery, Lasik, and Nixon (2005) reported male scores on the MFT-B that were eight points higher than those from women when controlling for essentially the same stock of covariates. Black

and Duhon (2003) reported a 3.79-point male advantage, while Bean and Bernardi (2002) report a 3.64-point male advantage. Contreras, Badua, Chen, and Adrian (2011) and Mirchandani, Lynch, and Hamilton (2001) also found that men significantly outperformed women while controlling for standard covariants and dispositional factors.

Terry, Mills, Rosa, and Sollosy (2009), in a study of the MFT-B performance of online students, did not find gender to be a significant predictor of MFT-B scores when they controlled for ACT scores, GPA, transfer, internationalism, and participation in online business education; however, in their study group, students' percentage score on the MFT-B assessment accounted for either 10% or 20% of the course grade in a business capstone course. They reported that a 10% contribution of MFT-B performance to the capstone course grade resulted in a 12.91% increase in the MFT-B percentile score and a 20% contribution to course grade resulted in an 18.1% score increase. These results were consistent with results reported by Bycio and Allen (2007) who, using a self-reported motivation scale, had previously reported that student motivation is an important determinant of performance on the MFT-B.

While the overwhelming majority of studies of performance on the MFT-B report gender differences and male overperformance, the nature and determinants of those differences have neither been explained or speculated on. This study's objective is to attempt to fill this gap in the understanding of the determinants of MFT-B scores. The possibility of a male advantage in the MFT-B raises the specter of a threat to the validity of this widely used measure of academic achievement among undergraduate business students, an issue that needs to be fully examined and understood.

This study seeks to contribute an understanding of these observed differences in gender performance in two ways. First, a measure of critical thinking ability will be introduced into the explanatory scheme in an effort to more completely examine the impact of gender differences on MFT-B performance. The other main approach in the study, informed by results reported by Terry et al. (2009) and Bycio and Allen (2007), is to examine the impact of motivation on performance and the possibility of differential gender reactivity to an offer of extra or course credit incentives linked to MFT-B performance.

The study begins with a description of the setting and data used to consider these heretofore unexamined relationships. Distributions of MFT-B scores, ACT scores, GPA, and measures of critical thinking ability by gender are described along with an examination of the determinants and intercorrelations of the MFT-B. Analysis of gender differences in MFT-B scores when extra credit is offered is provided, along with an examination of gender performance on the MFT-B across different academic majors. Quantile regression was used to examine differences in genders along the distribution of the MFT-B scores.

## DATA AND METHOD

The setting for the present study was an undergraduate college of business at a Carnegie Research I, Land Grant University, which has held continuous AACSB accreditation for over 25 years. Students at the focal institution are predominantly Caucasian with a small population of international and ethnic students. As an element of a comprehensive assessment of learning process, the MFT-B has been administered to every graduating senior at this institution from the summer semester of 2005 through the spring of 2009. Background data utilized in the study were obtained from student records. The total number of students in the study population was 885. Full data, most notably MFT-B and ACT scores, were available for 692 students, with the difference primarily attributable to the fact that transfer students were not required to submit ACT scores. In addition, for each of the 692 students in the core study, the data include university GPA measured at graduation, gender, and major area of study (accounting, finance, management, or marketing). Beginning in the spring semester of 2008, students received extra credit points in their capstone business course to incent their best efforts on the MFT-B (5 points for a 50th percentile score, 7.5 points for 75th percentile, and so on).

Critical thinking skills are generally defined as the ability to evaluate sources of information, challenge assumptions, understand context, analyze arguments, and use metacognition (Brookfield, 1987; King & Kitchener, 1994; Kurfiss, 1988). In this study critical thinking was measured with the California Critical Thinking Skills Test (CCTST; Facione & Facione, 1994).

Published by the California Academic Press, the CCTST is a multiple-choice educational assessment tool specifically designed to assess selected core critical thinking skills (Facione, 1990). The CCTST is widely used throughout the United States and internationally (Insight Assessment, 2011). The test consists of 34 multiple-choice items yielding an overall measure of critical thinking skills and five sub-scales measuring: analysis, evaluation, inference, deductive reasoning, and inductive reasoning (Jacobs, 1995). The CCTST has been demonstrated to have acceptable reliability and validity when used to assess critical thinking skills in college students (Facione & Facione, 1994; Facione, Giancarlo, Facione, & Gainen, 1995). As a part of the institutional assessment of learning agenda, the CCTST was administered to every graduating senior from the spring semester 2006 to spring 2007, a total of 327 students.

Table 1 reports the full list of variables, their definitions, and descriptive statistics. Additionally, there are no very high (above  $\pm .5$ ) correlations between any pair of independent variables (table not reported). Therefore, we believe multicollinearity was of no consequence in the analyses. There are statistically significant observed differences between male and female MFT-B scores and GPA in the sample means. Interestingly, males outperformed females on the MFT-B



TABLE 1  
Definitions and Descriptive Statistics

Variable	Description	<i>M</i>	<i>SD</i>	Minimum	Maximum	<i>n</i>
MFT-B	Student MFT-B score on a scale of 120–200	161.49	12.28	128	194	885
ACT	Student ACT score on a scale of 1–36	23.39	3.46	14	34	692
GPA	GPA measured at the time of graduation	3.13	0.40	1.99	4	880
CTTOT	Total critical thinking score on a scale of 0–34	20.39	4.44	8	31	327
CTANAL	Analysis	4.84	1.19	1	7	327
CTINF	Inference	10.10	2.41	2	15	327
CTEVAL	Evaluation	5.45	2.08	0	11	327
CTDED	Deductive	9.24	2.76	2	16	327
CTIND	Inductive	11.15	2.30	4	16	327
Male	Binary variable = 1 if male	0.54	—	0	1	885
ExCredit	Binary variable = 1 if extra credit was offered	0.41	—	0	1	885
FIN	Binary variable = 1 if finance major	0.17	—	0	1	885
ACCT	Binary variable = 1 if accounting major	0.22	—	0	1	885
MGMT	Binary variable = 1 if management major	0.33	—	0	1	885
MKTG	Binary variable = 1 if marketing major	0.27	—	0	1	885

Note. MFT-B = Major Field Test in Business.

(male  $M = 162.7$  vs. female  $M = 160.0$ ), while women's GPAs were higher (male  $M = 3.05$  vs. female  $M = 3.22$ ). Study results suggest that female students had higher GPAs even after controlling for the variation in their ACT scores. Similar results were reported in other settings (e.g., Siebert et al., 2006; Stater, 2009) and were intuitively attributed to higher academic motivation among females. The Levene test for the equality of variances was performed and the only statistically significant differences observed were between male and female variances of MFT-B scores (female variance = 135.2 vs. male variance = 162.5) and CCTST subscores for inductive reasoning (female variance = 4.63 vs. male variance = 5.87). Therefore, men had higher MFT-B mean scores but larger variance in those scores.

## RESULTS

### Determinants of MFT-B scores

A number of studies have examined the effect of student characteristics on performance on the MFT-B (Allen & Bycio, 1997; Bagamery et al., 2005; Bean & Bernardi, 2002; Bielinska-Kwapisz & Brown, 2011; Bielinska-Kwapisz et al., 2012a, 2012b; Black & Duhon, 2003; Bycio & Allen, 2007; Contreras et al., 2011; Mason et al., 2011; Mirchandani et al., 2001; Stoloff & Feeney, 2002; Terry et al., 2009; Zeis, Waronska, & Fuller, 2009.) Most of those studies included standardized test scores (ACT/SAT), GPA, majors, and gender as independent variables. However, none of the previous literature analyzing MFT-B scores controlled for students' critical thinking abilities and only a few studies analyzed the effect of critical thinking on the performance on class exams. Jenkins's (1998) results suggest that students with higher measures of critical thinking skills (as measured

by the Watson Glaser Critical Thinking Appraisal test) and past academic performance outperformed other students on a class exam and a comprehensive final examination in an upper-division auditing course. In the same study, gender and age proved insignificant across all auditing examination scores, while GPA was significantly predictive of performance on two previous course exams. Roberts and Dyer (2005) used the Engagement, Maturity, and Innovativeness Critical Thinking Disposition Inventory test and showed that motivation, self-efficacy, and critical thinking disposition explained 8.8% of the variance in a linear combination of attitudes and post-test achievement.

### Gender, Critical Thinking, and the MFT-B

To examine the effect of gender and critical thinking on the variation in MFT-B scores, the following basic model was utilized:

$$MFT - B_{ik} = \beta_0 + \beta_1 ACT_{ik} + \beta_2 GPA_{ik} + \beta_3 Male_{ik} + \beta_4 ExCredit_{ik} + \beta_5 CT_{ik} + \eta_k + \varepsilon_{ik}, \quad (1)$$

where  $MFT-B_{ik}$  is the MFT-B score of student  $i$  in major  $k$ ;  $ACT_{ik}$  is ACT score;  $GPA_{ik}$  is overall GPA;  $Male_{ik}$  is a binary variable that takes the value of 1 if a student is a man and 0 if a woman;  $ExCredit_{ik}$  is a binary variable that takes the value of 1 if a student could receive extra points for a good performance;  $CT_{ik}$  is the CCTST score or a subscales score;  $\eta_k$  are majors' fixed effects;  $\beta$ s are coefficients to be determined; and  $\varepsilon_{ik}$  is the error term. In the context of this study, ACT scores were used as a proxy for general cognitive capability (Koenig, Frey, & Detterman, 2008) and GPA as a measure of time input and effort. Several variations of the previous model were estimated and the results from the best regressions are presented in Table 2. During the period in which the CCTST test scores were obtained, extra credit for MFT-B

TABLE 2  
Regression Results (Dependent Variable of MFT-B Score)

Variable	Model 1: All data ( $n = 692$ )		Model 2: Data limited to CCTST ( $n = 238$ )		Model 3: Controlling for CCTST inference ( $n = 238$ )	
	Coefficient	<i>t</i>	Coefficient	<i>t</i>	Coefficient	<i>t</i>
Constant	99.32	30.2	99.05	19.28	100.11	20.22
ACT	1.50	13.5	1.47	8.43	1.01	5.08
GPA	8.50	8.5	9.10	5.62	8.44	5.39
Male	4.33	6.2	2.77	2.44	1.86	1.68
Finance	1.67	1.5	2.43	1.28	2.82	1.54
Management	-3.63	3.8	-3.29	1.99	-3.18	2.00
Marketing	-5.82	5.9	-5.37	3.12	-5.30	3.20
ExCredit	1.29	1.9	—	—	—	—
CCTST inference	—	—	—	—	1.21	4.40

Note. For Model 1,  $R^2 = .5013$ , adjusted  $R^2 = .4962$ . For Model 2,  $R^2 = .5119$ , adjusted  $R^2 = .4992$ . For Model 3,  $R^2 = .5500$ , adjusted  $R^2 = .5360$ . For dependent variable FEMALE MFT,  $R^2 = .480$ , adjusted  $R^2 = .4698$ . CCTST = California Critical Thinking Skills Test; GPA = grade point average; MFT-B = Major Field Test in Business.

performance was not offered to students. Therefore, Model 1 ( $n = 692$ ) in Table 2 uses all data, but the rest of the models employ only data collected during the time period when the CCTST test was administered ( $n = 238$ ). Our results suggest that the best explanatory model includes the inference subscale of the CCTST (Model 3) and explains about 54% of variation in the MFT-B scores. This model suggests that the GPA was the most important predictor of MFT-B scores. A 10% increase in GPA increases MFT-B by 1.6% (all elasticities were calculated at sample means). The impact of ACT was similar: a 10% increase in ACT scores increased MFT-B by 1.46%. The impact of the critical thinking score was smaller: A 10% increase in the critical thinking inference score increased the MFT-B by 0.1%. Consistent with reports from previous studies management and marketing students achieved lower scores on the MFT-B exam as compared to accounting students (Barboza & Pesek, 2012; Black & Duhon, 2003; Mason et al., 2011).

Of particular interest in this study is the coefficient of the male variable. In Model 3, after controlling for the critical thinking inference scores, the coefficient of the male variable was insignificant. Therefore, critical thinking inference scores may explain the difference between male and female scores on the MFT-B. Compared to Model 2, which used the same sample of observations, but did not control for critical thinking, the coefficient was smaller by 33% and insignificant. These results suggest that differences in critical thinking inference scores may be responsible for the difference between male and female scores on the MFT-B reported in previous studies.

#### Gender, Extra Credit, and the MFT-B

To further analyze gender differences on MFT-B scores, the impact of an offer of extra credit contingent on performance was examined. GPA is frequently used as a measure of stu-

dent's effort and, as previously noted, in the study sample women had overall significantly higher GPA scores than men. Therefore, we hypothesized that the extra credit offered for good performance on the MFT-B exam would impact women's scores less than men's scores because female students may already be performing at peak levels and would not need or be benefited by an incentive to increase effort. Therefore, the estimation was performed separately by gender and the results are presented in Table 3. Most of the male and female coefficients were quite similar to one another. As before, the most important variables in explaining the variation of the MFT-B scores were ACT and GPA; however, quite interestingly there were significant differences between male and female students' response to the extra credit offer: Males who were offered extra credit for performance on the MFT-B had, on average, MFT-B scores 2.48 points higher than male scores received in years that extra credit was not offered. However, the extra credit coefficient for women was

TABLE 3  
MFT-B by Gender ( $n = 692$ )

	Dependent variable: MALE MFT		Dependent variable: FEMALE MFT	
	Coefficient	<i>t</i>	Coefficient	<i>t</i>
Intercept	100.35	21.93	103.73	22.94
ACT	1.56	10.23	1.44	8.94
GPA	9.13	6.49	7.62	5.40
Extra Credit	2.48	2.61	-0.29	-0.31
FIN	0.90	0.59	1.93	1.14
MGMT	-4.45	-3.11	-2.69	-2.08
MKTG	-6.60	-4.24	-5.32	-4.29

Note. For dependent variable MALE MFT,  $R^2 = .5080$ , adjusted  $R^2 = .5000$ . For dependent variable FEMALE MFT,  $R^2 = .4800$ , adjusted  $R^2 = .4698$ . MFT-B = Major Field Test in Business; GPA = grade point average.



not significant and actually had a sign in an unanticipated direction.

To further analyze the reaction of students to an extra credit offer, the differences throughout the MFT-B distribution were examined using quantile regression. Quantile regression was initially described by Koenker and Bassett (1978) and Koenker and Hallock (2001) and is based on the minimization of weighted absolute deviations for estimating conditional quantile functions. Quantile regression models the relation between a set of independent variables and specific percentiles (or quantiles) of the dependent variable. Unlike linear regression, in which the regression coefficient represents the change in the dependent variable produced by a one-unit change in the associated independent variable, quantile regression parameters estimate the change in a specified quantile of the dependent variable produced by a one unit change in the independent variable. Quantile regression makes use of the entire sample and is not equivalent to utilizing the dependent variable series of subsamples and applying ordinary least squares (OLS) to those subsamples. Therefore, quantile regression is not the same as dividing the data into percentiles and then applying OLS to those percentiles (e.g., Hallock, Madalozzo, & Reck, 2008). Quantile regression has been used in educational settings by Eide and Showalter (1998); Escudero, Giovagnoli, and Porto (2009); Levin (2001); Prieto-Rodriguez, Barros, and Vieira (2008); and Robinson and Lubinski (2011). Bielinska-Kwapisz and Brown (2011) employed quantile regression to estimate whether the performance returns on certain student characteristics in business programs differ along the conditional distribution of their MFT-B test scores.

In Table 4, estimated coefficients at the 5th, 25th, 50th, 75th, and 95th percentiles of the overall MFT-B male score distribution quantiles are reported. By comparison, OLS coefficients for male scores reported in Table 3 are repeated in the first column. The results suggest that ACT and GPA scores were significant determinants of male MFT-B scores along the whole distribution. However, the effect of the extra credit was not uniform throughout the male MFT-B scores distribution. Recalling that, on average, extra credit offers

increased overall male scores by 2.48 points it is interesting to note that the effect was not the same for all quantiles. There was almost no effect for the lowest fifth percentile (0.56;  $p = .75$ ) and the effect remained insignificant at 25th percentile (1.49;  $p = .29$ ). The extra credit effect became significant at the median (2.35;  $p = .025$ ) and increased to 2.92 at 75th percentile ( $p = .04$ ). The effect peaked at 3.62 for the top fifth percentile of male MFT-B scores ( $p = .006$ ). Similar quantile regression was performed for women. In that instance an extra credit offer was not significant and had an unexpected negative sign for the OLS and for all quantiles except at the 95% quantile when the sign became positive, although remaining statistically insignificant (2.38;  $p = .15$ ). Therefore, the extra credit incentive was not significant for any females in the study and up to the median for the male distribution. However the extra credit incentive had a significant positive impact on the top 50th percentile of men.

### Analysis by Major

Significant differences in MFT-B scores by major (Table 2) were observed in this study. As previously noted, similar differences were reported in previous studies with marketing and management student performance on the MFT-B inferior to finance and accounting student performance while controlling for standard variables (ACT, GPA, gender). However, the previous literature is silent in regard to the impact of gender differences by major. Table 5 presents the results of the OLS and quantile regressions where the MFT-B scores are the dependent variable and ACT, GPA, extra credit, and male are the independent variables. In this instance regressions were performed by major and only coefficients on the male variable are reported. The results from the OLS regression show that for all majors, men outperform women on the MFT-B with score differentials ranging from 3.53 points in marketing to 6.38 in accounting. However, the results from the quantile regression show large differences across majors and quantiles. Overall, the largest observed differences between males and females were in accounting (all accounting quantile coefficients were above all quantiles from

TABLE 4  
MFT-B Males by Quartile

	OLS Table 3 (Males)		5th		25th		50th		75th		95th	
	Coefficient	<i>t</i>	Coefficient	<i>t</i>	Coefficient	<i>t</i>	Coefficient	<i>t</i>	Coefficient	<i>t</i>	Coefficient	<i>t</i>
Intercept	100.35	21.93	77.95	8.52	92.38	12.76	98.42	21.35	114.39	16.99	125.47	30.05
ACT	1.56	10.23	1.56	6.85	1.62	7.04	1.66	10.39	1.39	6.08	1.29	6.08
GPA	9.13	6.49	11.63	4.62	9.21	4.22	9.24	6.50	8.12	3.84	7.06	6.88
ExCredit	2.48	2.61	0.56	0.32	1.49	1.05	2.35	2.25	2.92	2.01	3.62	2.78
FIN	0.90	0.59	-0.70	-0.21	1.76	0.63	1.00	0.63	1.45	0.63	2.58	2.81
MGMT	-4.45	-3.11	-2.35	-0.84	-4.46	-1.81	-5.51	-4.13	-6.21	-2.92	-2.65	-1.58
MKTG	-6.60	-4.24	-5.67	-2.04	-5.28	-2.17	-7.51	-5.24	-8.62	-3.11	-3.00	-1.99

Note. Adjusted  $R^2$  for ordinary least squares (OLS) = .5000. MFT-B = Major Field Test in Business; GPA = grade point average.

TABLE 5  
Coefficients on Male From MFT =  $f(\text{ACT}, \text{GPA}, \text{ExCredit}, \text{Male})$  by Major

	Ordinary least squares		20th		50th		80th	
	Coefficient	<i>t</i>	Coefficient	<i>t</i>	Coefficient	<i>t</i>	Coefficient	<i>t</i>
MGMT	3.70	3.15	4.46	3.21	4.18	3.46	3.18	1.42
MKTG	3.53	2.88	2.31	1.34	2.63	1.88	5.27	2.33
ACCT	6.38	4.22	6.56	2.72	7.78	4.47	6.82	3.22
FIN	4.37	2.13	2.24	0.56	5.18	2.93	8.59	1.98

management and marketing and all but 80th percentile in finance). In finance, at the 80th percentile on MFT-B scores the male advantage was 8.59 points but was not significant at the lowest percentile. The same analysis was performed while controlling for critical thinking scores; however, as expected, none of the coefficients were significant.

## DISCUSSION AND CONCLUSIONS

### Summary

The MFT-B is intended to measure mastery of business knowledge by senior students in undergraduate business programs. It has been estimated that almost half of all colleges of business utilize the MFT-B as a part of their assessment of learning process and to support external accreditation by the AACSB. The MFT-B has attracted attention from researchers who have primarily focused on the determinants of performance on the assessment. Among other identified explanatory variables, previous studies have consistently reported a gender effect with male advantage. In the previous studies male MFT-B scores were significantly higher than female scores in a range from 3.6 to 8.4 points, even after controlling for general ability with ACT/SAT scores and effort with GPA. Using a large multiyear sample, we examined the nature of this gender effect and its implications for the use of MFT-B as an assessment instrument.

In the focal study sample ( $n = 692$ ), men's MFT-B scores were 4.33 points higher than women's scores. These differences are statistically significant when controlling for ACT and GPA. The results of this study suggest that it is very likely that male advantage on the MFT-B emanates from two sources. First, and perhaps most importantly, is a gender-based difference in critical thinking skills. In this study, critical thinking was measured with the CCTST and even though no significant bivariate gender differences on the CCTST were observed, when control for ACT scores was introduced into the analysis, a significant male advantage appeared. A further examination of the impact of critical thinking on gender differences in MFT-B scores suggests that the inference subscale of the CCTST was the source of most of the explained differences. MFT-B gender differences by major were also analyzed. The largest gender differences were

found in the top decile of finance majors, a difference, which is explained by the differential CCTST scores.

Additionally, our study results indicate that part of the gender differences on the MFT-B can also be explained by any performance incentives given to students to encourage best efforts when taking MFT-B. Significant gender differences in reactivity to those incentives were observed. In this study sample there was no female reactivity to an offer of extra course credit tied to performance on the MFT-B. But results do indicate that the top 50th percentile of males in the MFT-B distribution reacted positively and significantly to the same extra credit offer.

### Implications

Results of our study are reassuring in regard to the possibility of gender bias in the MFT-B itself. However, as most of the difference between men and women on the MFT-B assessment can be explained by the differences in the critical thinking-inference abilities, it is important to include some measure of critical thinking while explaining or attempting to fully understand local variation in MFT-B scores. Our results also point to the criticality of critical thinking ability in academic performance.

The use of extra credit to incent best efforts when taking the MFT is also very interesting, but more complex. This study's results indicate that incentives tied to MFT-B performance will yield higher institutional scores, but almost all of that increase emanates from men in the top half of the MFT-B distribution. The argument in favor of an extra credit offer is that it may yield not just higher, but more accurate MFT-B scores, reflecting the full measure of business knowledge amongst the cohort completing the assessment. The argument against an extra credit offer is that extra credit may unfairly benefit men for doing something (making a best effort on the MFT-B) they should be doing anyway. However, women, apparently inclined to give their best effort absent an extra-credit offer, may be disadvantaged in a course or other setting where the extra credit is applied.

### Limitations

The focal performance metric in this study was the MFT-B. ETS, publishers of the MFT-B, described using subject matter experts to produce the assessment tools (Educational



Testing Service, 2009), but provide no definitive evidence regarding validity—a factor that has attracted concerned attention (Allen & Bycio, 1997; Parmenter, 2007). The value of the performance findings, albeit not necessarily the potential value of the methodology described in this study, is of course limited by the validity of that measure.

## Conclusions and Further Research

The contribution of this study lies in the illumination of not just the size, but the nature and determinants of the gender differences, which have been observed in numerous studies of the MFT-B. Previous research on the determinants of MFT-B scores estimated coefficients at the mean. However, as this study demonstrates, it is both interesting and helpful to see the determinants of the MFT-B scores examined at all points of the distribution. The use of quantile regression, which examines relationships at all points on the distribution curve, would seem to substantially improve the accuracy of the assessment of learning and contribute to a better understanding of the contribution of dispositional factors, such as gender, which impact academic achievement as compared with estimates of the coefficients on sample means obtained by the use of OLS. We encourage others to replicate, critique, and improve on this methodology.

The relatively large multi-year data set used in this study has permitted an examination of differential gender performance comparisons within and between different cohorts at the same institution. Generalization of the findings regarding the size, nature, and determinants of these gender differentials will be enhanced by replications in other institutional settings and studies across different institutions.

Most importantly, study results suggest that statistically significant gender differences on the MFT-B assessment disappear after controlling for critical thinking skills. This result can be helpful in understanding differential gender performance on this widely used assessment of learning and concerns regarding gender bias. Replication and additional study of gender performance on the MFT-B is strongly encouraged.

Finally, this study suggests that men and women react differently to an offer of academic extra credit for good performance on the MFT-B. While an extra-credit offer did raise the MFT-B institutional mean, in this study only men in the top half of the MFT-B score distribution seemed to be positively impacted by the extra-credit offer, something which those considering a similar offer might wish to consider.

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# The Relative Influences of Neutralizing Behavior and Subcultural Values on Academic Dishonesty

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The author examined the influence of neutralizing techniques and subcultural values on academic dishonesty using a sample of 327 ethnically diverse business majors. Findings suggest that both neutralizing behavior and subcultural norms are correlated with academic dishonesty; however, neutralization techniques have a stronger association. Findings suggest the importance of clearly communicating behavior standards to combat neutralizing behavior, and the importance of implementing measures to increase the ethicality of the overall subcultural group.

**Keywords:** academic dishonesty, business majors, cheating, neutralizing behaviors, racial differences, rationalizing, subcultural values

The present financial crisis has focused a spotlight on the damage that can be produced by irresponsible business practices that seem to have an exclusive focus on the bottom line. Critics in the popular press blame business schools, at least in part, for the present economic woes and argue that colleges of business bear some of the responsibility for the excessive risk-taking that helped initiate the credit crunch of the present recession (Gardiner, 2010). Some argue that business schools have failed to communicate that there is more to business than just making money (Gardiner).

Many colleges of business are also alarmed by the numbers of students admitting to cheating on exams and assignments. Depending on which study is cited, and which type of academic dishonesty is in question, research reports indicate that more than 60% of all students cheat at some point during their college tenure (Allen, Fuller, & Lockett, 1998; Chapman, Davis, Toy, & Wright, 2004; Haines, Diekhoff, LaBeff, & Clark, 1986; McCabe, 1992). This is in addition to some large and well-publicized cheating scandals at prestigious universities, including master of business administration (MBA) students at Duke University, and undergraduate students at the University of Virginia, the Air Force Academy, and the University of Maryland (Allen, 2007).

Data suggest that students majoring in business are less ethical than students majoring in other disciplines (Smith,

Davy, & Easterling, 2004; Smyth, Davis, & Kroncke, 2009) with weaker cognitive moral development than their nonbusiness peers (Smith et al.). Students' propensity to cheat in an academic setting is strongly related to their overall ethicality (Lawson, 2004), a unidimensional construct (Smyth et al.). Thus, students who cheat on one graded assignment or exam are likely to cheat on other graded assignments and exams (Eve & Bromley, 1981) as well as on team projects (Swift & Nonis, 1998).

Dishonest students are also more apt to believe that business people do not typically act in an ethical manner, and are less likely to believe that good ethics is good business (Lawson, 2004). Some researchers suggest that the many high-profile news stories of unethical business practices have led business students to believe that dishonest behavior is common and acceptable, as long as they do not get caught (Nonis & Swift, 1998; Roig & Ballew, 1994).

Students who cheat in the college classroom are likely to behave dishonestly in the workplace (Crown & Spiller, 1998; Harding, Carpenter, Finelle, & Passow, 2004; Lawson, 2004; Shipley, 2009; Sims, 1993). Cheaters have reported that they believe it is likely they will have to compromise their ethical standards to move forward in their future careers (Lawson). Business schools have an important role in imparting the knowledge and skills students will need when they transition from the college campus into the business world. Equally important, colleges of business also have a responsibility to help students develop the appropriate attitudes and ethical values they will need in the workplace.

Borrowing from the fields of sociology, criminology, psychology, business education, and business ethics, this

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investigation examines dishonest behavior through the lens of neutralization theory and culture-conflict theory. Previous studies have not examined both neutralization techniques and subcultural values and influences together to assess the relative contribution of each to dishonest behavior as this research does. Further, this research employs a racially diverse sample, with a wide range of different business majors, demographic characteristics not in evidence in previous research on this topic. Thus, this investigation examines the relative influence of these two constructs using a diverse ethnic population and a wide variety of business majors. The effort to try to better understand the ethical behavior of business students could provide information to help shape more ethical business people in the future. By studying the cognitive processes and contextual factors associated with dishonesty that are open to administrative and managerial influence this research makes an important theoretical contribution to understanding this complex issue. Literature from the fields of deviant sociology, criminology, psychology, and business ethics relating to neutralizing behaviors and subcultural influence will now be discussed since this research serves as a theoretical foundation for the present investigation.

### Neutralization Theory

Neutralization theory was proposed by Sykes and Matza (1957) from the field of deviant sociology, while studying juvenile delinquency. These two sociologists hoped to better understand how juvenile delinquents could violate social norms, with seemingly, little guilt. Neutralization theory seeks to explain the paradox of behavior in which some individuals violate the very societal norms and laws in which they believe.

Neutralization theory explains the delinquent behavior of adolescents through the use of specific neutralization techniques. It argues that a great deal of adolescent delinquency is based on what is essentially an argument defending a crime, in the form of a rationalization for deviant behavior. The adolescents studied viewed their rationalizations as being logical and just, although certainly not consistent with the legal system or with society in general. By using these rationalization techniques, juvenile delinquents are able to engage in behaviors that are in opposition to generally accepted societal norms, while at the same time, protecting their self-image and neutralizing self-blame. Societal norms and controls that normally serve to constrain or inhibit deviant conduct are rendered inoperative via neutralization techniques with the individual left free to engage in maladjusted behaviors without damage to his or her self-esteem.

Sykes and Matza (1957) proposed five general types of neutralizing behaviors: denial of responsibility, denial of injury, denial of the victim, condemnation of the condemners, and the appeal to higher loyalties. This first type of neutral-

ization technique, the denial of responsibility, is when the individual is able to define himself or herself as completely excused from for his or her deviant behavior. These individuals see their delinquent behaviors as being beyond their control. By defining themselves as more acted upon than acting, the individual is able to clear the way to violate dominant social norms without actually disagreeing with them. An example of this technique relating to academic dishonesty is the belief that cheating is understandable when other students make no attempt to cover their answers during an exam. The student is able to deflect his guilt onto the students not covering their answers and thus to feel no guilt or remorse for copying answers to cheat on an exam.

The second type of neutralization behavior is the denial of injury. In this type of neutralization technique, the individual focuses on their belief that there is not a specific person that has been hurt or harmed in any way by their deviant actions. The individual does not have to argue that the behavior is consistent with the law or even with social norms. The cheater only needs to believe that his or her behavior does not cause anyone any great harm. An example of this operationalized into a survey statement would be when a student cheats, it isn't hurting anyone.

The third type of neutralization technique is the denial of the victim. In this type of neutralization, the individual accepts responsibility for their behavior, but they blame the victim for what occurred. The adolescent feels that the academic dishonesty is a form of retaliation or punishment for an injustice the victim has committed against him or her. In an academic setting this argument is usually developed related to the instructor, and so is very similar to the fourth type of neutralization technique, the condemnation of the condemners. Thus, it will be combined with the fourth technique in this research as it has been previously (McCabe, 1992). By condemning the condemners, the students are able to deflect the focus of attention away from themselves and focus instead on the motives or behaviors of those who are condemning them. An example that would operationalize these two neutralization techniques is the survey statement, cheating is understandable when the instructor does not seem to care if students learn the material.

The last major type of neutralization behavior is the appeal of higher loyalties. With this type of neutralization technique, the individual is able to override any guilt or self-blame by denying that his or her behavior was motivated by any type of self-interest. The individual argues that he or she is obligated to behave in a certain way because of being caught in a predicament with two possible conflicting actions. Unfortunately, the adolescents feel it is necessary to act in accordance with their unique moral obligations rather than within the norms and laws of the larger society. An example of a survey statement that would allow the measurement of this type of neutralization technique is cheating is okay if a student is in danger of losing his or her scholarship. In



this example the student is far more loyal to their financial responsibilities than to integrity or to learning the course material.

Neutralization techniques may occur before, during, or after the deviant behavior, allowing individuals to explain away generally accepted codes of conduct, removing moral barriers, and in doing so these techniques can help to facilitate deviant behavior (Sykes & Matza, 1957). Neutralizing techniques effectively allow the individual to deflect the guilt and disapproval that they might have otherwise had to deal with (Haines et al., 1986) and so they may assist in the perpetuation and habitual repetition of these deviant acts (Minor, 1984), leading to the first hypothesis:

*Hypothesis 1 (H1):* Increased academic dishonesty would be associated with an increased use of neutralization techniques among college of business undergraduate students.

### Organizational or Peer Subculture

High visibility 21st century corporate scandals such as Enron and WorldCom are often discussed as ethical breakdowns. However, it is logical to examine these corporate fiascos through the lens of the criminology literature since these were not so much ethical breakdowns, but instead acts of large-scale and high-level criminality, that is, white collar crime (Heath, 2008). Each act of poor judgment was probably surrounded by a broad and shady region of unethical conduct, and, some argue, failures to respect the law (Heath). Thus, it makes sense to look to the criminology literature to try to better understand what issues came to bear in these disasters.

One important dimension of white-collar crime is the social dimension (Heath, 2008). Much white-collar crime has been traced to deviant subcultures. Within these subcultures, groups have their own internal rules and norms of behavior that are reproduced over time (Heath). This is consistent with culture-conflict theory that suggests that an individual's deviant behavior will reflect the subcultural norms and behaviors that are at odds with those of the larger society (Crown & Spiller, 1998; Eve & Bromley, 1981). Culture-conflict theory suggests that an individual, when trying to decide whether to act according to the norms and values of society or of their subculture, will decide to behave consistently with their subcultural group rather than according to the contradictory norms and values of the larger society.

Academic integrity literature also suggests that there is a social component to unethical behavior. Chapman et al. (2004) found that students are more likely to cheat when a friend of theirs is involved in the cheating. Houston (1986) similarly found that copying answers from another student's paper was positively correlated with strength of acquaintanceship and with being able to sit beside a friend when taking an exam. Similarly, Megehee and Spake (2008) found that individuals within a group that is relatively homogeneous are likely to behave similarly. McCabe and Trevino (1993)

found that a student's perception of their peers' cheating was strongly related to how often that student decided to cheat. Supporting this, in the organizational literature, it is recognized that the more ethical the organizational climate and culture, the more ethical an individuals' beliefs and behavior will be (Ford & Richardson, 1994).

Building on these literature streams, in this investigation I argue that a student's overall evaluation of the integrity of their social group will have an impact on that individual student's ethicality when completing exams and/or homework assignments. Thus, according to culture conflict theory, there should be a relationship between a student's perception of the amount of student cheating occurring and the immediate organizational subculture's or peer group's approval or disapproval of cheating. Students' perception of the amount of cheating occurring should also correlate with students' perception of the supportiveness of the college campus climate for cheating, including the likelihood of getting caught and the severity of punishment, if caught (Eve & Bromley, 1981), leading to the second hypothesis:

*H2:* Increased academic dishonesty would be associated with individuals' perceptions of the organizational integrity of their peer group and school.

This hypothesis was operationalized by measuring students' perception of the integrity of the organizational subculture within which they were located. Statements measuring this included in the measurement instrument examined whether respondents feel their peers approve or disapprove of their cheating, how often they see others cheat, how likely it is to be caught, and how likely it is for cheaters to be punished for their academic dishonesty.

In addition, based on research that has shown that students who believe that cheating is common in the business world are more likely to cheat while in school (Lawson, 2004) this research tested whether neutralization techniques underlie the relationship between believing that cheating is common in the business world, cheating, and neutralization techniques the following hypothesis was tested:

*H3:* Business students who believe that cheating is common in the business world would more likely to engage in techniques of neutralization.

## METHOD

### Sample

Undergraduate business administration majors from an Association to Advance Collegiate Schools of Business (AACSB)-accredited research university in the southeast make up this convenience sample. Three hundred and thirty-nine surveys were administered. Twelve surveys were removed from the sample because they were completed by graduate students, resulting in a total usable sample of 327

TABLE 1  
Demographic Characteristics of Respondents  
( $n = 327$ )

Characteristic	No./%
Sex	
Men	51%
Women	49%
<i>M</i> age	23.15
Minimum age	18 years
Maximum age	55 years
Race	
African American	22.90%
Asian	11.60%
Hispanic/Latino	6.10%
Caucasian	44.30%
Multiracial	5.80%
Missing	9.03%
Major	
Accountancy	14.1%
Computer information systems	8.9%
Finance	8.9%
Health administration	0.3%
Hospitality	4.6%
International business	2.1%
Managerial sciences	20.0%
Marketing	18.0%
Personnel and employment relations	.3%
Real estate	2.0%
Risk management and insurance	4.0%
Other	10.0%
Missing	5.0%

respondents. Men comprised 51% of the sample. As explained previously, this sample was also racially diverse, and contained a good representation of 11 undergraduate business administration majors (see Table 1 for further details).

## Measures

The variables included in the instrument were the following:

**Neutralizing techniques.** The neutralizing statements employed here were adapted from Haines et al. (1986; see Table 2 for specific questionnaire statements). The individual questions were separated into four summary variables reflecting the five techniques of neutralization. Denial of the victim and condemnation of the condemners were combined into one summary variable, since these two factors are basically the same in an academic setting as described in McCabe (1992). Two questions were dropped from the 11 items employed in Haines et al. because they loaded on different factors in the initial exploratory factor analysis. This nine-item measure was averaged to create a summary variable of neutralization behaviors and resulted in a Cronbach's alpha of .91. Each of the four resulting Neutralization

technique factors also had an acceptable Cronbach's alpha (see Table 2).

**Subcultural norms and influence.** This scale was developed based on the literature in deviant sociology (Sykes & Matza, 1957), criminology (Heath, 2008), business education (Owens & Nonis, 1998), and business ethics (Ferrell & Ferrell, 2011). Questions pertaining to this factor included statements such as, "My peers generally think that cheating is okay" and "I often see students cheating in my business classes." In addition, the scale contains statements consistent with findings from McCabe and Trevino (1993) and also reflected statements designed to measure the individual's perception of the ethicality of their subcultural environment, including measuring the perception of the likelihood of being caught cheating, and the likelihood of being severely disciplined if caught cheating. Thus, this eight-item summary scale was designed to capture the social norms and attitudes of students regarding academic dishonesty and has a Cronbach's alpha of .71 (see Table 2 for more detail). Although this is lower than expected, it is still adequate for exploratory research.

**Demographic data.** Respondents were asked to provide their gender, age, specific business administration major, and race.

**Academic performance.** Students were asked to provide their grade point average (GPA) as a surrogate measure of their academic performance. Researchers have found that students are fairly accurate when reporting their GPA on confidential questionnaires (Bacon & Bean, 2006).

**Dishonest academic behavior.** Six items asked students about their academic integrity when taking in-class exams, completing individual homework assignments, and taking individual take-home exams. Students were also asked about their temptation to cheat, for example, "I have been tempted to cheat on exams and/or assignments" and, "I would cheat if I knew I wouldn't get caught," as well as their feelings about cheating, "Cheating does not bother me." These behaviors and attitudes were then averaged into a summary variable to examine the dishonest behaviors with the neutralization technique and subcultural norms and influence summary variables. This six-item dimension has a Cronbach's alpha of .81 (see Table 2 for more detail).

All summary scales are averaged in this research project to allow comparisons among scales that comprise a different number of questions. All scales are based on 7-point modified Likert-type questions, with responses ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).



TABLE 2  
Scale Questions and Reliabilities for the Five Types of Neutralization, Subcultural Norms and Influence, and Academic Dishonesty Factors

*Items from Original Five Techniques of Neutralization (adapted from Haines, Diekhoff, LaBeff, & Clark, 1986; Cronbach's  $\alpha = .91$ ; 9 items) Denial of responsibility (Cronbach's  $\alpha = .90$ ; 3 items)*

1. Denial of responsibility (Cronbach's  $\alpha = .90$ ; 3 items)
  34. Cheating is understandable when other students make no attempt to cover their answers during an exam.
  36. Cheating is understandable if the course is required, but the course material seems irrelevant.
  37. Cheating is okay if the course information is too hard; if no matter how hard a student studies they cannot understand the course material.
- 2 and 3. Denial of any injury
  21. When a student cheats, it isn't hurting anyone.
4. Condemnation of the condemners (Cronbach's  $\alpha = .76$ ; 3 items)
  12. Cheating is understandable if the instructor acts as if their course is the only one that matters.
  27. Cheating is natural if the instructor leaves the room during an exam.
  29. Cheating is understandable when the instructor doesn't seem to care if students learn the material.
5. Appeal to higher loyalties (Cronbach's  $\alpha = .83$ ; 2 items)
  28. Cheating is okay if a student is in danger of losing his or her scholarship.
  35. Cheating is understandable when a student doesn't have time to study because he/she is working to pay for school.
6. Subcultural norms and influence (Cronbach's  $\alpha = .71$ ; 8 items)
  10. Instructors should do more to prevent cheating.
  11. It is the professor's fault if students are caught cheating in his or her class.
  17. My peers generally think that cheating is okay.
  18. Students who are caught cheating are rarely disciplined.
  22. I often see students cheating in my business classes.
  24. I know that some of my friends have cheated on course assignments and/or tests.
  25. It is hard to say, "no," when a friend asks me to help him or her cheat on an exam.
  33. My peers generally think that cheating is okay.
7. Dishonest academic behaviors (Cronbach's  $\alpha = .81$ ; 6 items)
  20. Cheating does not bother me.
  23. I would cheat if I knew I wouldn't get caught.
  26. I have been tempted to cheat on exams and/or assignments.
  30. I sometimes work with other students on take home exams that are supposed to be completed individually.
  31. I sometimes work with other students when completing individual homework assignments.
  32. I often cheat on exams.

*Note.* Subcultural norms and influence questions were developed based on the behavior and values of the subculture individuals are a part of (Chapman, Davis, Toy, & Wright, 2004; Crown & Spiller, 1998; Erickson, 1988; Eve & Bromley, 1981; Ferrell & Ferrell, 2011; Heath, 2008; McCabe & Trevino, 1993; Megehee & Spake, 2008).

## Procedure

Using the measures described previously, a 49-item questionnaire was created. Once the draft instrument was developed, feedback was obtained from a researcher familiar with the topic of academic dishonesty. Then, two pilot tests, involving a total of 65 students, were conducted prior to the actual administration of the questionnaire. Some ambiguity in the wording of a couple of questions was noted and appropriate modifications were made.

## RESULTS

### Associations Between Neutralization Techniques, Subcultural Norms, and Cheating

There are a number of important findings shown in Table 3. First, all of the relationships shown in Table 3 are in the ex-

pected direction and all are statistically significant at the .001 level or less. As detailed in Table 3, academic dishonesty is significantly correlated with neutralization techniques. Supporting *H1*, academic dishonesty was strongly associated with neutralization techniques among college of business undergraduate students ( $r = .765$ , two-tailed  $p = .001$ ). Additionally, the academic dishonesty summary variable was significantly correlated with the four specific neutralizations techniques: (a) denial of responsibility, (b) denial of injury, (c) denial of the victim and condemnation of the condemners, and (d) higher loyalties (see Table 3).

Understanding that there is a strong association between neutralization techniques and academic dishonesty, the policy question arises of which neutralization techniques seem to be the most strongly correlated with reported academic dishonesty. Condemning the condemners is the most highly correlated neutralization technique ( $r = .713$ , two-tailed  $p =$

TABLE 3  
Bivariate Correlations of Different Types of Academic Dishonesty, With the Dimensions of Neutralization Techniques, and Subcultural Norms and Influence Summary Variables

Measure	<i>n</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. Cheat on take-home exams	321	3.48	1.98	—										
2. Cheat on homework	323	4.10	1.91	.720	—									
3. Often cheat on exams	323	1.86	1.45	.375	.236	—								
4. Denial of responsibility	313	2.42	1.41	.446	.369	.679	—							
5. Denial of a victim and of any injury	324	2.77	1.67	.259	.230	.411	.455	—						
6. Condemnation of condemners	323	2.97	1.48	.508	.414	.521	.676	.422	—					
7. Higher loyalties	314	2.52	1.50	.465	.335	.592	.819	.523	.750	—				
8. Summary subcultural norms and influence	309	3.75	0.99	.314	.305	.287	.390	.189	.467	.326	—			
9. Academic dishonesty summary	320	3.257	1.30	.708	.800	.642	.695	.500	.713	.690	.417	—		
10. Neutralization techniques summary	312	2.67	1.26	.493	.398	.644	.871	.730	.839	.915	.406	.765	—	
11. Perception that cheating is common in business world	322	4.39	1.55	.154	.198	.214	.333	.263	.321	.400	.305	.306	.400	—

Note. All correlations are significant at  $p < .001$ . Items were administered on a 7-point modified Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

.000). Thus, students are able to shed themselves of guilt by telling themselves that it is the professor's fault and that they are forced to cheat. They tell themselves things such as "the instructor acts as if his class is the only one they are taking," or "the instructor acts as if he/she doesn't care if the students learn the course material." Or, students often interpret some of their professors' actions as communicating that it's okay to cheat, such as when an instructor leaves the room during an exam. By rationalizing their behavior, students are able to project their guilt onto the instructor and are able to deflect guilt for their lack of integrity.

A take away from this result is the importance of what the professor may potentially be signaling to students. Instructors should communicate that they want their students to learn the course material, and that they care whether students seem able to grasp the information. Data suggest the importance of clear signals from professors and administrators that stress the importance of integrity so students do not feel integrity is a goal of lesser importance.

Denial of responsibility is the second most strongly correlated neutralization technique with students who behave less honestly in the classroom ( $r = .695$ , two-tailed  $p = .000$ ). That is, those students who behave with less integrity seem to be able to absolve themselves of guilt by telling themselves that they are not really responsible for their behavior. Instead, they seem to be unleashed from guilt by convincing themselves that the material on the exam is irrelevant, or is too difficult, or that it is the fault of other students who are not covering their answer sheets.

Denial of responsibility is followed closely by the appeal to higher loyalties ( $r = .690$ , two-tailed  $p = .000$ ). In the appeal to higher loyalties, personal finances seem to hold sway more than honesty or taking the time to learn class material. The questions used on this part of the scale were "Cheating is okay if a student is in danger of losing his or her scholarship," and "Cheating is understandable when a student doesn't have time to study because he/she is working to pay

for school." Students using this neutralization technique don't seem to consider the importance of studying harder or longer hours, or the value of good time-management skills.

In examining the data to respond to *H2*, as predicted, academic dishonesty was positively correlated with the students' subcultural norms, and influence' of their peer group, supporting *H2* with a correlation between academic dishonesty and subcultural norms and influence of ( $r = .417$ , two-tailed  $p = .000$ ; see Table 3). Thus, as the subcultural group is more (less) supportive of the values and behaviors underlying academic dishonesty, both will tend to increase (decrease) together.

*H3* asked whether neutralizations techniques would be associated with believing that dishonesty is common in the business world. *H3* states that business students who believe that cheating is common in the business world are more likely to engage in techniques of neutralization. This hypothesis was supported with a positive correlation between these two variables of .400 (two-tailed  $p = .000$ ). Thus, those individuals who believe that cheating is common in the business world, are more likely to be dishonest themselves, and are more likely to use neutralization techniques to rationalize their own behavior. Individuals may work to convince themselves that dishonesty is common in the business world as another neutralization technique, although when added to the other neutralization statements, it lowers the Cronbach's alpha for the neutralization techniques summary variable slightly, from .912 to .906. Thus, in summary, all three hypotheses are supported. The data also document the relationship between the subcultural norms and influence and the belief that cheating is common in the business world (see Table 3).

So, now that the hypotheses have all been tested, another interesting question was investigated: What is the relative impact of each of these neutralization techniques as well as the influence of the subculture of the organization? To better understand this question, a multiple regression analysis was



TABLE 4  
Prevalence of Cheating and Attitudes Toward Cheating

Type of cheating and attitudes toward cheating	Agree		Disagree	
	<i>n</i>	%	<i>n</i>	%
I sometimes work with other students on take-home exams that are supposed to be completed individually.	115	35.2	157	48.0
I sometimes work with other students on homework that is supposed to be completed individually.	171	52.3	117	35.8
I often cheat on exams.	19	5.8	276	84.4
I would cheat if I knew I would not get caught.	65	19.9	201	61.5
I have been tempted to cheat on exams and/or assignments.	160	48.9	121	37.0
Cheating does not bother me.	74	22.6	195	72.5
Cheating is common in the business world.	156	47.7	81	24.8

*Note.* Questions were asked on a 7-point modified Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Responses were then collapsed, with 1, 2, or 3 representing disagree, and 5, 6, or 7 representing agree. The neutral responses were dropped from this analysis, resulting in a smaller sample size for these questions, and less than 100% of the sample shown.

conducted with the summary variable for academically dishonest behavior as the dependent variable, and the four neutralization variables, as well as the subcultural norms and influence variable as the independent variables. The model was statistically significant, and except for the variable, higher loyalties, all of the other independent variables were statistically significant and able to help explain over sixty percent (adjusted  $R^2 = .601$ ) of the variability in the academic dishonesty summary dependent variable (see Table 5). The variable, condemn the condemners had the greatest influence on academic dishonesty, able to explain over 50% of the dependent variable, academic dishonesty (adjusted  $R^2 = .507$ ) as a standalone independent variable in a bivariate regression model.

With the apparent common use of neutralizing techniques there is the possibility that these techniques may have a hardening effect over time because the acceptance of these rationalizations may lead to the erosion of behavior inhibitions (Brent & Atkisson 2011). Thus, it may help to explain the recidivism that we see among cheaters in school as well as among those in the workplace.

Comparatively subcultural norms and influence has the least influence predicting the summary variable of academic dishonesty, although it still is able to explain over 17% of the dependent variable in a bivariate regression model. This is still an interesting finding, although, providing evidence that the neutralization techniques are able to explain far more of the variability in academic dishonesty also supported by the weaker but still statistically significant correlation ( $r = .417$ ,

TABLE 5  
Regression Model of Summary Variable of Academic Dishonesty, the Neutralization Techniques (Denial of Responsibility, Denial of a Victim and of Any Injury, and the Condemnation of the Condemners) and the Influence of the Subcultural Norms and Influences

Explanatory variable	<i>b</i>	$\beta$	<i>p</i>
Constant	.801		.000
Condemnation of condemners/denial of the victim	.314	.359	.000
Denial of responsibility	.302	.335	.000
Denial of any injury	.133	.173	.000
Subcultural norms and influence	.118	.091	.027

two-tailed  $p = .000$ ) of subcultural norms and influence of the summary academic dishonesty variable. When subcultural norms and influence is combined with the other independent variables in the model, it only adds .006 to the explanatory ability of the multiple regression equation. It is likely that through socialization, the neutralization techniques are being taught and thus the influence of the subcultural cohort may very well already be measured in the neutralization factors.

Because this dataset contains a very diverse sample, both the racial composition and the 11 different majors were examined for statistically different groups. Of the different racial groups, Asians were statistically different (higher) from African Americans, Hispanic/Latinos, and Caucasians in the neutralization techniques summary variable and in the subcultural norms and influence summary variable. Further, Asians and African Americans were statistically different from (higher than) Hispanic/Latinos and Caucasians in the academic dishonest behavior summary variable (see Table 6 for further detail). When the tests were conducted for differences among the 11 different business majors and the three summary variables, there was not a statistically significant difference among the different business majors, also interesting and differing from previous research.

### Prevalence of Cheating

Although not a main goal of this study, the dataset provides interesting information about the prevalence of three types of cheating among undergraduate business students, as outlined in Table 4. To clearly illustrate the prevalence of cheating, these data have been collapsed into agree or disagree responses from the 7-point Likert-type scale. In so doing, the neutral responses were dropped from the analysis, resulting in percentages that will be less than the full sample size. Examining the three questions that ask about cheating (working together on take-home exams that are supposed to be completed individually, home work assignments that are supposed to be completed individually, and often cheating on in-class exams), the first statement asks students whether they work with other students when completing their individual homework assignments. More than half (52.3%)

TABLE 6  
Race–Ethnicity by Neutralization Techniques, Dishonest Behaviors, and Subculture

Race–ethnicity	Dishonest academic behavior	Cheat on homework	Cheat on take-home exams	Cheat often on in-class exams	Peers think cheating is okay	Friends cheated	Denial of responsibility	Denial of a victim or injury	Condemnation of condemners	Higher loyalties	Subcultural norms
African American											
<i>M</i>	3.487	3.849	4.351	2.135	3.653	4.69	2.546	2.622	3.151	2.681	3.736
<i>n</i>	73	73	74	74	72	75	72	74	75	72	70
<i>SD</i>	1.346	2.185	2.020	1.738	1.817	1.816	1.511	1.677	1.558	1.5481	.973
Asian											
<i>M</i>	3.881	4.026	4.368	2.684	4.108	5.394	3.189	3.605	3.570	3.176	4.284
<i>n</i>	38	38	38	38	37	38	37	38	38	37	37
<i>SD</i>	1.333	1.684	1.792	1.987	1.524	1.569	1.572	1.794	1.542	1.533	0.914
Hispanic/Latino											
<i>M</i>	3.292	3.600	4.300	1.750	2.895	4.050	2.263	2.650	2.983	2.632	3.322
<i>n</i>	20	20	20	20	19	20	19	20	20	19	19
<i>SD</i>	1.080	1.930	1.809	.967	1.243	2.0125	0.879	1.497	1.327	1.373	0.987
Caucasian											
<i>M</i>	3.024	3.273	3.944	1.611	3.007	4.720	2.161	2.583	2.685	2.262	3.624
<i>n</i>	142	143	144	144	141	143	140	144	143	141	138
<i>SD</i>	1.250	1.889	1.865	1.207	1.500	1.890	1.262	1.526	1.323	1.368	0.999
Total											
<i>M</i>	3.286	3.555	4.138	1.91	3.323	4.757	2.414	2.739	2.955	2.526	3.724
<i>n</i>	273	274	276	276	269	276	268	276	276	269	264
<i>SD</i>	1.307	1.961	1.896	1.517	1.626	1.853	1.394	1.633	1.449	1.468	1.005

Note. Items were administered on a 7-point modified Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Responses were then collapsed, with 1, 2, or 3 representing disagree, and 5, 6, or 7 representing agree. The multiracial category was dropped from this chart for greater clarity among reported races.

of students reported that they work with other students when completing their individual homework assignments.

Take-home exams are the most problematic of these three graded activities with over 35% of students admitting to working with other students when completing individual take home exams. With more than one of every three students working with other students, this dishonesty places the honest students at a serious disadvantage. Other investigations also have reported a large percentage of students who do not complete take-home exams individually, as they were instructed (Lanier, 2006). Although 48% of students surveyed report that they didn't work with other students on individual take-home exams, the information that over a third of students do work with other students is problematic. Also interesting in these data is the small number of students who reported cheating often on exams, with less than 6% (5.8%) of students reporting that they often cheat when taking in-class exams. With what is discussed in the popular press, this percentage might be expected to be much higher.

in this analysis supports the hypotheses that dishonesty is strongly associated with neutralization techniques, and that honesty is also correlated with the influence of the subculture within which an individual is embedded. The present data also suggest that neutralization techniques have a stronger correlation with academic dishonesty than do the values of the subculture within which the individual is embedded. The data from this investigation provides evidence that individuals are able to live a double standard when it comes to their own ethicality. They are able to believe in the basic norms and values of our culture, of honesty, and integrity, but at the same time they are also able to make excuses for their deviations from these norms. From the findings of this research it is apparent that these individuals actually believe their excuses. That is, they appear to believe their rationalizations, and seem to truly believe that they can and should break the rules in some circumstances. Further, it appears from the data in this analysis that the subculture reinforces this easy ability to violate societal norms and values.

## DISCUSSION

In order to learn more about ethical decision making it is important to understand the cognitive process and the context within which these ethical decisions are made. This research helps to move the field in that direction. The data employed

## IMPLICATIONS AND CONCLUSIONS

The strong predictive ability of the theory of neutralization techniques suggests that the way that an individual thinks about his or her actions and their environment can have an enormous influence on that individual's behavior (Heath,



2008). In business ethics and in academic honesty, individuals typically know what ethical behavior is, that is, they typically know the right thing to do. The goal, then, is to determine how to motivate individuals to do what they know is the right thing to do. The very interesting aspect of neutralizing techniques is that once it is understood how otherwise honest individuals are able to neutralize their guilt, professors and managers alike should be able to work to override and discredit individuals' neutralizing behaviors. Thus, by understanding the main categories of neutralizing techniques as were found in this research investigation, instructors and managers should be able to work to counteract the common excuses employed in each category of the neutralization techniques. Although this seems highly logical, future research is needed to test this assumption.

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# Teaching About Climate Change in the Business Curriculum: An Introductory Module and Resource List

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Business managers are increasingly engaged with climate change issues, but pedagogy on climate change in the business curriculum is in its infancy. The author addresses the need for greater integration of climate change knowledge in the business curriculum by describing a teaching module for an undergraduate introductory business course and providing a comprehensive list of resources for teaching about climate change at all levels in the business curriculum.

**Keywords:** climate change, environmental sustainability, resource list, teaching module

Based on an assessment of over 25,000 datasets covering all continents and multiple time periods, the Intergovernmental Panel on Climate Change (IPCC) described the warming of the earth's climate as "unequivocal" (Pachauri & Reisinger, 2007, p. 2). In 2010, atmospheric CO<sub>2</sub> averaged 389.78 ppm or 70 ppm higher than 50 years prior, and is at its highest level in over 400,000 years (National Oceanographic and Atmospheric Administration, 2011). While the global climate has clearly changed and been changing for thousands of centuries due to natural cycles and events, the IPCC presents compelling evidence that the current alterations to the climate are predominantly anthropogenic. The burning of fossil fuels, which has escalated since the start of the Industrial Revolution, is one of the most significant of these human activities leading to increased levels of CO<sub>2</sub> in the atmosphere (Pachauri & Reisinger, 2007). These increased CO<sub>2</sub> levels lead to changing climate patterns that, in turn, result in significant changes in human and natural systems, including—and most relevant to management scholars and practitioners—the production, transportation, and energy industries (Holdren, 2008).

The world's system of industry and commerce is simultaneously contributing to and reacting to the consequences of global climate change, and business managers are increasingly engaged with climate change issues. Over 3,000

organizations around the world currently measure and report their greenhouse gas emissions through the Carbon Disclosure Project, and one recent international poll showed that 61% of chief executive officers are specifically planning for the impact of climate change on their businesses (PricewaterhouseCoopers, 2010). Business practitioners may be increasingly focused on climate change, but Goodall (2008) noted that business scholars are not. Her data show that only 9 of more than 31,000 articles published in the 30 leading business journals in the past 20 years dealt with climate change.

If there is limited research on the interplay between climate change and business management, the issue of climate change appears to also be underaddressed in the management classroom. While general issues of sustainability and environmental management have gained a foothold in the management curriculum, as evidenced by a special issue in *Academy of Management Learning & Education* (September 2010), two special issues in the *Journal of Management Education* (June 2009 and April 2004), and an edited volume by Wankel and Stoner (2009), curriculum ideas that specifically focus on climate change are less widespread and certainly less documented. A recent search of article abstracts for *Academy of Management Learning & Education*, *Journal of Education for Business*, and *Journal of Management Education*—three prominent journals that address management education—found no articles on the topic of teaching about climate change. As has been pointed out regarding business competencies (Abraham & Karns, 2009), it is crucial to include relevant management topics in the business curriculum.

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In the present article I attempt to address the need for management education on climate change by describing a teaching module that I have developed for and integrate into an introductory business course at the undergraduate level and by providing a comprehensive resource list for teaching about climate change at all levels in the business curriculum. I first used this module in the fall semester of 2010. The setting is a small, liberal arts college in the mid-Atlantic region of the United States and at which environmental sustainability is a defining initiative. Course enrollment was 40 students, comprising predominantly freshman and sophomores but also including a few juniors and seniors who were taking the course as an elective. The module was developed as an outcome of a summer workshop, funded by the National Aeronautics and Space Association's Partnership Agreement for Climate Change Education, on integrating climate change across our college's entire curriculum. I opted to create a course module on climate change rather than a standalone course because modules fit easily into existing curricular structures, are relatively simple to develop, require fewer resources than would a standalone course, and can be implemented with minimal administrative oversight (Rusinko, 2010). Refer to the Appendix for a resource list for teaching about climate change.

## COURSE MODULE

This course module on climate change for an introductory business course is designed to span over two 75-min classes, with sufficient time between the two class meetings for an out-of-class writing assignment. The module is positioned on the course syllabus toward the start of the semester and following our study of social responsibility and ethics in the course textbook.<sup>1</sup> Introducing the subject of climate change early in the semester allows me to set the tone for the course that climate change is an appropriate consideration in business decision making. It is also possible to refer back to climate change issues as we progress through the semester and our text, which both reinforces the learning on climate change and provides additional connections between climate change and business management. Studying the text chapter on ethics and social responsibility prior to our work on climate change lays the groundwork for students to consider performance measures other than those related to financial outcomes. Learning goals for the module include the following: (a) recognizing the significance of climate change issues in contemporary models of business decision making, (b) developing a basic understanding of anthropogenic climate change, (c) becoming familiar with climate change initiatives presently being undertaken by businesses, and (d) considering how the industry in which a company operates is relevant to that company's climate change activities. These goals served as the basis for designing the classroom activities and the out-of-class writing assignment.

This teaching module can be viewed through the lens of Bloom's taxonomy of learning (Anderson & Krathwohl,

2000; Krathwohl, Bloom, & Masia, 1964) that describes the cumulative learning process as recognizing, comprehending, applying, analyzing, synthesizing, evaluating knowledge, and creating new knowledge. On Day 1, students are asked to recognize the data and understand the concept of climate change. In the written assignment between the two class meetings, students are asked to apply, analyze, and evaluate their knowledge of climate change. In Day 2 of the module, students are asked to again analyze but also to synthesize and create new knowledge concerning the relationship between business and climate change.

## Day 1

The first of the two class sessions is devoted to a lecture that provides a brief overview of the science of climate change, explains some of the philosophical and conceptual underpinnings for why there is disagreement about the phenomenon of climate change, and instructs students on the connections between business activities and climate change. To prepare for this class, students are assigned to read a section (specifically, pages 5–23) of the book *Climate Change: What's Your Business Strategy?* by Hoffman and Woody (2008). In this reading, Hoffman and Woody shift the emphasis of climate change from an environmental issue to a market issue, thus encouraging business managers to consider competitive positioning and market opportunities.

The lecture begins with a brief introduction to the science of climate change including both natural, historic climate cycles and anthropogenic influences on climate. I draw the material for this part of the lecture directly from earth science text books by Pittock (2009) and Ruddiman (2007) and from Dessler and Parson's (2010) book written for a general audience. Several of the websites listed in the Appendix are also very useful for understanding and communicating the science of climate change. One reason that climate change may not be more commonly taught in the business curriculum is the wariness on the part of business professors to move outside of their knowledge base and confidently and convincingly teach about the science of climate (N. B. Kurland, personal communication, December 3, 2010). An alternative to incorporating this material into a lecture, and a means of addressing this very legitimate concern, is to invite an earth or climate scientist as a guest lecturer for a portion of the class on Day 1.

Despite the widespread consensus among climate scientists in support of anthropogenic climate change, polls conducted around the globe in 2010 show that only a slight majority of the public is convinced that the climate is changing. In the United Kingdom, 60% believe that climate change is definitely or could be occurring (Jowit, 2010). In a poll of United States citizens, 54% agreed that climate change is taking place (Newport, 2010). The second part of the lecture on Day 1 deals with possible explanations for this skepticism. It is helpful for students to recognize that at least four factors contribute to the general public's uncertainty about and



potential denial of climate change and, more specifically, anthropogenic climate change. First, there is a widespread lack of understanding by the public regarding scientific inquiry and study (Dessler & Parson, 2010; Hulme, 2009). Clear-cut, yes–no answers, especially to complex issues, are slow to develop, and scientists describe their outcomes in terms of statistical significance. According to the IPCC, the likelihood that the increase in certain greenhouse gases in the atmosphere is a result of human activities is greater than 95% (Pachauri & Reisinger, 2007). For those who do not understand the scientific process, results that are reported in terms of confidence levels can be seen as weak or ungrounded and, as many deniers claim, debatable. Second, in arguing against anthropogenic climate change, deniers tend to cherry-pick the evidence in support of climate change by, for example, pointing to and arguing against one data set, one time period, one geographic location, or one type of measurement. The IPCC's statement regarding the unequivocal warming of the climate due to human activities is based on the exhaustive assessment of over 25,000 datasets covering all continents and multiple time periods (Pachauri & Reisinger, 2007). Third, the media's propensity for nonbiased or balanced reporting in an effort to provide fair and complete coverage of an issue actually leads to a distortion of scientific facts (Boykoff & Boykoff, 2004). While the journalistic norm of balance is very useful for social and political news, Gelbspan (1998) pointed out that it is inappropriate for science news because both sides of the story rarely carry equal scientific footing. A fourth factor that helps to explain the denial of climate change involves intentional media campaigns to discredit climate scientists. Numerous books and investigative articles (e.g., Hoggan & Littlemore, 2009; Orestes, 2010; Pooley, 2010) have documented such campaigns, which are developed and funded by individual companies and by industry associations. These companies, often in the energy and automobile sectors, perceive climate change responses as a threat to their profitability, and use media campaigns to instill doubt about the veracity of anthropogenic climate change and to shape public policy.

The final element of the lecture on the first day of this two-day teaching module is to explore the connection between climate change and business. Climate change is presented as both a risk for businesses and an opportunity (Ceres, 2006). The former include (a) regulatory risk (e.g., increased standards regarding greenhouse gas emissions), (b) physical risk (e.g., additional damage to buildings and physical property resulting from increased storms), (c) competitive risk (e.g., losing customers to more innovative companies), and (d) litigation risk (e.g., public nuisance lawsuits). Opportunities for competitive advantage associated with a planned approach to climate change include (a) lower costs resulting from more efficient operations, (b) increased sales achieved by differentiating products and services, (c) improved ability to attract capital from investors who are environmentally attuned, and (d) improved human resource management through an

enhanced ability to attract and retain quality employees. Positioning climate change as a business opportunity reminds students that companies gain a competitive advantage by successfully responding to the external environment in which they operate. The lecture ends by providing examples of companies that currently integrate climate change into their business decision making, such as 3M and Wal-Mart, serving to reinforce for students the competitive advantage that can be gained by approaching climate change as not only a risk to be mitigated but also as an opportunity for differentiation, innovation, efficiency, and increased revenue.

### Out-of-Class Written Assignment

The lecture on Day 1 prepares the students for an out-of-class writing assignment that is due four days later on Day 2 of the module (the next class meeting). The writing assignment serves to reinforce the students' learning about climate change and to also enhance their writing skills—skills that are crucial to employers (Quible & Griffin, 2007). Students are individually assigned a company to investigate and describe in a short paper how their assigned company (a) contributes to climate change through its operations; (b) is impacted by climate change through, for example, increased costs, risks, and regulations; and (c) is addressing climate change through, for example, operational changes or product strategies. These three elements comprise a commonly used model in the study of climate change: causes-consequences-responses. Students are instructed to gather the information on each company from the company's website, although a more critical approach would be to also ask students to search for third-party articles or reports regarding the company's approach to climate change. The specific questions in the writing assignment are the following:

1. What does the company do (products/services?), and where does it operate?
2. [Causes] In what ways does the company contribute to climate change? (Think about how the company's operations and/or products and services generate greenhouse gas emissions.)
3. [Consequences] In what ways does climate change affect the company and the products/services it offers? What risks does the company face? What opportunities?
4. [Responses] How is the company responding to the issue of climate change? (For example, does it have GHG emissions targets in place, or has it modified its operations or product line?)
5. What is your overall sense of the company's engagement with climate change?

For this writing assignment, a list of 40 (e.g., the number of students in the course) companies was compiled from those companies that participate in the U.S. Environmental



Protection Agency's Climate Leaders program.<sup>2</sup> Assigning companies from this program insures that students will be able to find relevant information. The 40 companies selected for this assignment represent ten industries (four companies from each of the 10 industries). The industries were chosen to include a representative range and included banking, energy utilities, hospitality, and industrial chemicals. A company's greenhouse gas emissions and contribution to climate change—the company's carbon footprint—is partially determined by its industry and the standardized operations of that industry. Additionally, some industries have developed their own advocacy or action groups. Initially, students are not made aware that the 40 companies represent 10 specific industries. This writing assignment, and the breakdown of companies into the 10 industries, serves as the basis for the class discussion on Day 2 of this teaching module.

## Day 2

When we convene class on Day 2, the 10 industries are revealed to students, and students form groups of four according to the industry of their assigned company. Students are then directed to compare and contrast the companies, with regard to the causes-consequences-responses model related to climate change, within their industry group. Approximately 20 min is allotted for this group discussion. Next, one student from each industry group reports their findings to the full class. As the students report on their industry groups, I record the students' findings on the classroom whiteboard, being sure to organize them into causes, consequences, and responses for each industry. This reporting and recording require approximately 30 min of class time. For the remaining 25 min of Day 2, we engage in a class discussion around the significance of industry context as it relates to climate change, drawing on the findings of the student groups and the data on the board.

In this full class discussion in which we consider industry context, students are asked to move the exercise of comparing and contrasting up from the company level to the industry level. Questions used to prompt this discussion include the following:

1. How do industries compare regarding causes, consequences, and responses?
2. Why are some industries at greater risk than other industries, and how are the opportunities different among the ten industries?
3. What responses to climate change are appropriate at the industry level vs. at the individual business level?
4. How might an industry-level response impact a firm's competitive advantage?

We wrap up the class discussion on Day 2 by briefly referring to the learning goals of this climate change module.

## Student Learning Outcomes and Assessment

There are three forms of outcomes and assessments as part of this teaching module on climate change. The first outcome is the individual student paper described previously. This assignment helps with the third and fourth learning goals: seeing how companies are presently engaged with climate change and recognizing the significance of industry setting. Students individually research a specific company, and then work with their peers to develop knowledge around the industry context. This community-developed knowledge serves as the basis for the second assessment, which is an essay question on the subsequent course exam. Specifically, the question students are asked on the exam is to compare and contrast two industries with regard to the ways in which the companies in those industries tend to contribute to, are impacted by, and respond to climate change.

The third type of assessment was a brief survey instrument I used the first time that I incorporated the module into my introductory course, when I taught two sections for a total of 80 students. Students were queried at both the start and end of the semester. The short survey consisted of questions that had been drawn from two much larger surveys, one conducted by the Center for Climate Change Communication at George Mason University in conjunction with the Yale Project on Climate Change and one conducted by the BBC.<sup>3</sup> At the onset of the course, a substantial portion of the students (83.1%) believed that climate change is occurring, with even more students agreeing at the end (92.0%). Before the module, a majority of the students (55.9%) recognized the anthropogenic nature of climate change, and this increased slightly (64.0%) by the end of the semester. And, by the end of the semester, there was a large increase in the number of students who understood that climate scientists are generally in agreement about climate change (from 39.7% to 62.7%). While some of these changes in opinion may be modest, they do represent an increase in students' understanding of climate change. The student surveys were conducted anonymously and without any data being collected on demographics. Therefore, it was not possible to ascertain whether the changes or lack of changes in opinion were related to either class year (i.e., freshmen and sophomores vs. juniors and seniors) or to other learning in the course.

## DISCUSSION

The module on climate change described in this article is limited in its comprehensiveness, due to the shortness of the module and the introductory nature of the course. This module may be too advanced for introductory business courses comprised solely of freshmen and may be more appropriate for second- or third-year students in, for example, a course on business and society. The Appendix, which provides a list of resources for teaching about climate change in the business



curriculum, is useful for modifying this module in terms of its length, focus, and level of complexity. If more time were allotted to the module, or if this were a standalone class on climate change in the business curriculum, the changes in student opinions between the start and end of the semester may have been greater. To better understand climate change issues, in a longer module or a standalone course, students could be assigned readings on the science of climate change, such as the introductory chapters in the Ruddiman (2007) text or the science chapter in Dessler and Parson (2010). Additional time spent on the science of climate change would be valuable in helping students understand the theories and data upon which the study and assessment of climate change are based. This could address Bradfield's (2009) call for more "science-literate business managers" (p. 374). Another modification that could be made in a longer module or in a standalone course is a greater focus on the interplay between business strategy and climate change. Students could be assigned the full text of Hoffman and Woody (2008) and develop a plan for implementing climate change considerations into a company's strategy and operations. Several of the practitioner books listed in the Appendix could also serve as workbooks for students to explore the causes-consequences-and responses model in either a hypothetical or actual company. To consider how these varying personal beliefs impact business decisions, students could be reminded that in 2005, ExxonMobil's CEO Lee Raymond expressed doubts about the role that fossil fuels play in the increased levels of CO<sub>2</sub> in the atmosphere; students could use ExxonMobil as a case study on decision making and corporate strategy. A similar adaptation would be for students to investigate both companies that are proactive in their response to climate change as well as companies that are slow to incorporate climate change into their strategies and operations. This could serve as the basis for learning about the resource based view of firm performance (Barney, 1991; Wernerfelt, 1984) and how varying resource bundles impact strategic trajectories.

While a module on climate change could be extended in many ways, or even substantially developed into a full, standalone course on climate change, it should be noted that the benefit of this module's brevity is the ease with which it can be inserted into a semester-long course. The module could be kept short but adapted to serve other instructional goals. For example, it could be adapted to focus on the global context of business. In an empirical study of companies located in 10 countries, Galbreath (2010) showed that firms located outside of the United States are more proactive in incorporating climate change into their management practices than U.S. firms. An international set of companies could be used for the writing assignment, allowing students to consider the importance of culture and regulatory regimes and gain a better understanding of how the general external environment shapes management decisions and organizational action. In a marketing or business ethics course, the module could be adapted to facilitate a discussion on corporate greenwashing (Beder, 1997). Finally, for a

finance course, the assigned reading to open the module could be a section of one of the finance related texts listed in the Appendix and the written assignment could focus on investment decisions surrounding the price of carbon.

As noted previously, I am employed at a college that encourages the inclusion of environmental sustainability and climate change in courses across the curriculum. For faculty at institutions of higher learning that are less receptive to teaching about climate change and where they may face an antagonistic administration, Dessler and Parson (2010) provided useful insight. They explained that although skepticism is integral to the scientific process, deniers of climate change often do not understand the nature of scientific inquiry or the overwhelming scientific support for anthropogenic climate change. One approach that faculty can adopt is to argue that, because climate change is being widely addressed by business executives (see PricewaterhouseCoopers, 2010), it merits attention in business classes. It may also be possible to engage companies that provide financial support to one's college or university by featuring in the classroom any climate change initiatives these companies are undertaking.

## CONCLUSION

Climate change is a global phenomenon that increasingly and significantly impacts business decisions. These business decisions involve both the risks that a business must prepare for and the opportunities that a business can focus on to enhance its competitive position. Business students must gain the knowledge necessary to make effective and appropriate management decisions around a complex issue and an issue that requires some level of scientific literacy. This knowledge may be developed through standalone courses on climate change and business, or it can be developed incrementally by using a module such as the one I have described for an introductory business course.

The teaching module and resource list provided in this article help to address an educational need identified in the United Nations Principles for Responsible Management Education (PRME), which specifically calls for a greater focus on climate change. The mission of the PRME's Climate Change Working Group includes "Integrat[ing] climate-related topics into management education" (United Nations Principles for Responsible Management Education, n.d.). Additional research on the pedagogical issues surrounding the integration of climate change into our business curriculum is warranted and would be beneficial for helping our students prepare for future managerial decisions.

## ACKNOWLEDGMENTS

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## NOTES

1. The textbook for this course was *BUSN*, 3e, written by Marce Kelly and Jim McGowen and published by South-Western Cengage Learning in 2010.
2. The U.S. Environmental Protection Agency's (USEPA) voluntary Climate Leaders Program was a government-industry initiative introduced in 2002 to recognize a company's stellar management of greenhouse gas emissions. By August 2010, 274 U.S. companies, representing large and small businesses and multiple industries, had enrolled in the program. The USEPA began phasing out this program in September 2010, in preparation for a transition to a more formally regulated program. In the absence of this program, lists of companies that actively address climate change issues can be drawn from the Global Reporting Initiative or from any of the sustainability indices, such as those developed by Dow Jones of FTSE.
3. The survey by the Center for Climate Change Communication at George Mason University in conjunction with the Yale Project on Climate Change (Leiserowitz, Maibach, & Roser-Renouf, 2010) was accessed on July 27, 2010, from [http://www.climatechangecommunication.org/images/files/CC\\_in\\_the\\_American\\_mind\\_Jan\\_2010.pdf](http://www.climatechangecommunication.org/images/files/CC_in_the_American_mind_Jan_2010.pdf). The survey by the BBC (BBC, 2007) was accessed on the same date from [http://news.bbc.co.uk/2/shared/bsp/hi/pdfs/25\\_09\\_07climatepoll.pdf](http://news.bbc.co.uk/2/shared/bsp/hi/pdfs/25_09_07climatepoll.pdf).

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## APPENDIX—RESOURCE LIST FOR TEACHING ABOUT CLIMATE CHANGE

*In alphabetical order within categories*

### Books

#### *Science of Climate Change*

- Pittock, A. B. (2009). *Climate change: The science, impacts and solutions*. London, UK: Earthscan.
- Ruddiman, W. (2007). *Earth's climate: Past and future*, (2nd ed.) New York, NY: W. H. Freeman.
- Dessler, A. E., & Parson, E. A. (2010). *The science and politics of global climate change: A guide to the debate* (2nd ed.). Cambridge, UK: Cambridge University Press.

#### *Topic-Specific Textbooks (Ethics, Economics, and Functional Business Areas)*

- Belz, F.-M., & Peattie. (2009). *Sustainability marketing: A global perspective*. New York, NY: Wiley.
- Brohé, A., Eyre, N., & Howarth, N. (2009). *Carbon markets: An international business guide*. London, UK: Earthscan.
- Garvey, J. (2008). *Ethics of climate change: Right and wrong in a warming world*. London, UK: Continuum International Publishing.
- Kollmuss, A., Lazarus, M., Lee, C., LeFrance, M., & Polycarp, C. (2010). *The handbook of carbon offset programs systems: Funds, protocols and standards*. London, UK: Earthscan.
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- Toman, M. A., Ed. (2001). *Climate change economics and policy: An RFF anthology*. Washington, DC: RFF Press.

#### *Business Approaches to Climate Change (Practitioner Books)*

- Begg, K., van der Woerd, F., & Levy, D., Eds. (2005). *The business of climate change*. Sheffield, UK: Greenleaf Publishing.
- Hoffman, A. J. (2007). *Carbon strategies: How leading companies are reducing their climate change footprint*. Ann Arbor, MI: University of Michigan Press.
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- Sullivan, R. (2008). *Corporate responses to climate change: Achieving emissions reductions through regulation, self-regulation and economic incentives*. London, UK: Greenleaf Publishing.
- Weybrecht, G. (2010). *The sustainable MBA: The manager's guide to green business*. West Sussex, England: Wiley.

#### *Books Addressing Denial of and Disagreement About Climate Change*

- Hulme, M. (2009). *Why we disagree about climate change: Understanding controversy, inaction, and opportunity*. Cambridge, UK: Cambridge University Press.
- Gelbspan, R. (1998). *The heat is on: The climate crisis, the cover-up, the prescription*. Cambridge, MA: Perseus Press.
- Hoggan, J., & Littlemore, R. (2009). *Climate cover-up: The crusade to deny global warming*. Vancouver, Canada: Greystone Books.
- Orestes, N. (2010). *Merchants of doubt: How a handful of scientists obscured the truth on issues from tobacco smoke to global warming*. New York, NY: Bloomsbury Press.
- Pooley, E. (2010). *The climate war: True believers, power brokers, and the fight to save the earth*. New York, NY: Hyperion.

### Websites

#### *Scientific Data*

- Intergovernmental Panel on Climate Change (IPCC): <http://www.ipcc.ch>. A joint project of the World Meteorological Association and the United Nations Environment Programme and is considered to provide the most authoritative and comprehensive review of climate change science.
- NASA Global Climate Change: <http://climate.nasa.gov/evidence>. Provides overviews of climate change evidence, causes, effects, and uncertainties. Many useful graphics and images.
- NOAA Climate Services: <http://climate.noaa.gov>. Advertised as a "one-stop shop" portal for climate data and information.



- Society of Environmental Journalists: <http://www.sej.org.initiatives/climate-change/overview> Not specifically a scientific site, but offers “Basic Science” and is a good place to begin investigating the science of climate change.

#### *Curricula and Educational Resources*

- Climate Change at the National Academies: <http://dels-old.nas.edu/climatechange/index.shtml>. Condensed, easy to read reports prepared by scientists and engineers.
- Climate Literacy and Awareness Network (CLEAN): <http://www.cleanet.org>. A compendium of educational resources reviewed and compiled by the National Science Foundation. Includes “The Essential Principles of Climate Literacy.”
- See also the NASA and NOAA sites listed above.

#### *Charts, Videos, and Images*

- Climate Analysis Indicators Tools from the World Resources Institute: <http://cait.wri.org/figures.php>
- IPCC graphics: [http://www.ipcc.ch/publications\\_and\\_data/publications\\_and\\_data\\_figures\\_and\\_tables.shtml](http://www.ipcc.ch/publications_and_data/publications_and_data_figures_and_tables.shtml)
- NASA Global Climate Change: <http://climate.nasa.gov/evidence>. Provides overviews of climate change evidence, causes, effects, and uncertainties. Many useful graphics and images.
- Vital Climate Graphics based on IPCC reports: <http://www.grida.no/publications/vg/climate/>

#### *Student Simulations and On-line Activities*

- Climate Challenge game: [http://www.bbc.co.uk/sn/hot-topics/climatechange/climate\\_challenge](http://www.bbc.co.uk/sn/hot-topics/climatechange/climate_challenge). Hosted by

the BBC. Players choose policies and participate in international negotiations to set and achieve targets for greenhouse gas emissions.

- Ecological footprint activities and quizzes:
  - <http://www.carbonfootprint.com/calculator.aspx>
  - <http://files.earthday.net/footprint/flash.html>
  - <http://green.yahoo.com/calculator/>
- Stabilization Wedges game: <http://cmi.princeton.edu/wedges/game.php>. Hosted by Princeton University’s Carbon Mitigation Project. Players consider various technology options (wedges) for reducing greenhouse gas emissions.

#### *Websites and Blogs With Updates on Research and Policy Issues*

- Council of Foreign Relations, Climate Change Issues: <http://www.cfr.org/issue/climate-change/ri20>. Compilation and analysis of recent international news stories.
- RealClimate: <http://www.realclimate.org/> Discussions on the most recent climate research by working climate scientists.
- Science Daily: [http://www.sciencedaily.com/news/earth\\_climate/climate](http://www.sciencedaily.com/news/earth_climate/climate). A commercial website that compiles news stories and scientific reports regarding climate change.
- Skeptical Science: <http://www.skepticalscience.com>. A scientific forum for debating skepticism and busting myths about climate change.
- Weathervane blog by Resources for the Future: <http://www.rff.org/wv/default.aspx>. Updates on environmental and economic policies related to climate change.

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## Book Review

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Greenberg, D., McKone-Sweet, K., & Wilson, H. J. *The New Entrepreneurial Leader: Developing Leaders Who Shape Social & Economic Opportunity*. San Francisco, CA: Berrett-Koehler. (2011). 271 pp. ISBN: 978-1-60509-344-4. \$34.95.

“In many cases, precisely the wrong people attend (business school),” stated Seth Godin (2007, para. 20). “Schools ought to seek out entrepreneurs who are champing at the bit to get their businesses started.” And maybe, business schools ought to rethink their curriculum as to what kind of products they are graduating?!?

Babson College has taken both of these challenges head on in *The New Entrepreneurial Leader: Developing Leaders Who Shape Social & Economic Opportunity*. Noel Tichy, noted University of Michigan Professor and Director of Global Citizenship Initiative, remarked on the book’s back cover:

The Babson team cracked the code on global entrepreneurial leadership for the 21st century. Their three principles—cognitive ambidexterity, responsibility and sustainability, and self- and social awareness—are the bedrock for winning on the competitive global playing field of tomorrow. A conceptually sound and very practical guidebook for leadership success.

The authors, all on staff at Babson, are self-reporting the management education evolution and total rewrite of the curriculum of the college, the F.W. Olin Graduate School of Business, and the executive education program located in Wellesley, Massachusetts. The challenge to traditional business education modals is to not only teach students prediction logic and analytical thinking, but also to teach action-oriented creation logic simultaneously. This first principle is developed in Part I and the first three chapters. The result is what the authors call cognitive ambidexterity, the ability to smoothly switch back and forth between the two types of thinking—prediction logic and creation logic—depending on the challenges faced. They identify their goal: “Entrepreneurial leadership involves a new model of thought and action, which begins with a fundamentally different worldview of business and applies a different decision-making logic” (p. 10).

Guiding this different way of thinking is the second key principle and what the authors refer to as social, environmental, and economic responsibility and sustainability (SEERS). In Part II, chapters four through seven, the delicate balance between stakeholder demands, organizational demands, and a SEERS perspective is tackled:

The slow response of British Petroleum (BP) to adopt a quick and comprehensive approach to the 2010 *Deepwater Horizon* oil rig explosion and spill (Isikoff and Hirsh 2010) reinforces the stereotype that business has little concern and competency to address major environmental challenges. Furthermore business schools have been slow to address ways in which education can be used for shaping the attitudes of future business leaders through socially and environmentally responsible curricula. (p. 94)

Businesses continually remind their workers that they operate to make a profit, no matter what their individual ideology is. MIT Review Editor Michael Hopkins (2009) requested in the aftermath of the 2009 ECO:nomics conference:

What we’re interested in at the *MIT Sloan Management Review* is not sustainability policy alone but its deceptively widespread management implications. Our inquiry: Define and explore how the growing imperative for sustainable business practices will transform managerial decision making and strategy, how that imperative will require new organizational structures and ways of working, how it will reshape the organizations of the future—and how it will present leaders with new kinds of choices, whether they want to confront them or not. Our job here is to figure out those choices. To figure out, from a manager’s perspective, what to *do*. (p. 15)

Babson College is making a huge attempt to answer Hopkins’ challenges from a management education perspective.

The third principle of the entrepreneurial leader is referred to as self- and social awareness (SSA), the subject of Part IV and Chapters 8–10:

Through an authentic and insightful understanding of their own sense of purpose and identity and of how they are affected by the context around them, entrepreneurial leaders make more-effective decisions in uncertain and unknowable circumstances. (p. 12)



In an innovative Chapter 10, “Building and Engaging Social Networks Using Social Media Technology,” creative ways of building and leveraging relationships to advance new ideas forward are explored. Crowdsourcing is one way of enlisting stakeholders to help achieve business goals with minimal investment. It is the process of taking work that would traditionally be given to a contractor and instead outsourcing it to a large, unidentified group. Facebook users could be enlisted to translate Facebook into new languages. This has great potential to greatly reduce costs and expedite the process, especially in relatively new population groups.

While nine of the 12 chapters are written by faculty and research staff at Babson, there is consistent theme of developing the new entrepreneurial leader throughout. The book reads smoothly as though written by a single author, carefully and powerfully cultivating a logical revolutionary course of action in management education. Greenberg et al. make a significant distinction in the Introduction:

It is important to note that *entrepreneurial leadership* is not synonymous with *entrepreneurship*. It is a new model of leadership. Entrepreneurs, and the specific discipline of entrepreneurship, are often focused on new venture creation. Entrepreneurial leaders, on the other hand, also pursue opportunities outside of startup ventures. (p. 2)

If business schools do not make drastic changes to their pedagogy in the face of revolutionizing technology in today's world, they will find themselves virtually irrelevant (cf. Godin's comments) and graduating students without the trained capacity of creative logic to tackle an unknowable future. Instead, Babson College is transforming itself to produce a different quality of leader.

The message of this book should resonate with those entering business school as well as the young business managers in the field. They have been raised in a global and educational setting that embraces personal values and sustainability. Many already employed in business may chafe at the priority of the bottom line as the driving goal of all their companies do. They want their work to add value to others, even if they have to work at a reduced salary. Greenberg et al. raise a clarion call for business-minded workers to live out their values and ethics while striving to achieve sustainability in their life work (i.e., to have personal pride in what they devote themselves to every week).

The first three parts of the book develop the three keystone principles. Each chapter has an intentional and specific application to management education in the form of practical classroom exercises, interdisciplinary participation by faculty and students, cross-cultural and international immersion, case studies, as well as specific curriculum offerings. For example, at Babson Executive Education, an intentional part of the innovation programs for firms is to teach “a creation

approach through the use of games, experiments, simulations, and action-learning projects” (p. 57). In Part IV the authors summarize their efforts to change management pedagogy. Chapter 11 takes a different look at the tried-and-true case-based method of teaching in business schools. Rather than using the traditional decision-oriented case based on detailed analysis, they suggest focusing on post-decision-making. A new curriculum was developed called Giving Voice to Values (GVV), initially created to teach business ethics and value-based leadership. To help business students to implement a decision, GVV guides them “to develop implementation-scripts based on their own skill, relationships, and style as well as on the situation or context of the protagonist” (pp. 220–221). This methodology may be utilized by an individual professor or a department.

The twelfth and final chapter is a closing appeal for business schools to revamp their management education curriculum. Rather than tack on a good idea or two to a key course offering, Greenberg et al. explain how full integration of the principles into a whole curriculum needs to happen to make the changes necessary for an effective pedagogy.

I would recommend this book for business schools, management education faculty, CEOs and corporate executives, organizational consultants, and prospective business management students. It can sharpen an individual's focus on what the new entrepreneurial leader of this emerging generation needs to look like. Greenberg et al. also promote a brave and revolutionary new approach in helping to educate this leader of the future. Anyone seriously interested in incorporating this pedagogy into his or her own curriculum would get some excellent insights from this volume.

*The New Entrepreneurial Leader* is a direct response to Michael Hopkins' (2009) salient observation:

Strategy thinkers everywhere will tell you (high in the conversation, even) that profound uncertainty is going to remain a defining condition of the economic landscape. What's more, skill at managing in those conditions—coping with uncertainty—is often touted as a fundamental new leadership requirement. (p. 15)

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## Instructions to Authors

**Aims and Scope.** *Journal of Education for Business* features original basic and applied research articles in accounting, communications, economics, finance, information systems, information technology, management, management information systems (MIS), marketing, and emerging disciplines. Articles are selected through a blind peer-review process.

The journal entertains articles that deal with significant trends and issues affecting education for business; curriculum development and evaluation of educational programs in traditional and nontraditional settings; the process of instruction in accounting and finance, business fundamentals (math, law, economics, communications, organization), consumer economics, management, marketing, microcomputers, and office systems (office support staff training, information processing). Articles review and report on successful innovations and practice, propose theoretical formulations, or advocate positions on important and controversial issues.

**Manuscript Submission.** Contributors should submit a *blinded* copy of their manuscript to <http://mc.manuscriptcentral.com/heldref/jeb>s. Include the names and contact information for all authors in a separate cover letter; this file should be submitted in the space provided for cover letters or attached as a separate file designated “not for review.”

An abstract of 75 to 100 words should be provided on the first page. Authors should provide up to five key words for indexing (except for book reviews) and adhere to the *Publication Manual*, 6th ed., American Psychological Association, Washington, DC, 2001, for style guidelines in the preparation of manuscripts. Submit blinded copies of any tables and figures as separate files. Reproductions of figures (graphs and charts) may be submitted for review purposes, but the originals must be supplied if the manuscript is accepted for publication. As an author, you are required to secure permission if you want to reproduce any figure, table, or extract from the text of another source. This applies to direct reproduction as well as “derivative reproduction” (where you have created a new figure or table which derives substantially from a copyrighted source). Tables and figures should be prepared in accordance with the instructions given in the APA’s *Publication Manual* (see pp. 120–162). Avoid explanatory notes whenever possible by incorporating their content into the text. For essential notes, identify them with consecutive superscripts and list them in a section entitled NOTES at the end of the text.

*Regular Manuscripts* should normally not exceed 4,000 words, should not be simultaneously submitted elsewhere, and should not have been previously published. If data have been used in a prior study, authors must indicate that the new study is a follow-up to the previous one.

Revised manuscripts should not be uploaded to Manuscript Central as new submissions. Authors should retrieve their submissions from the “manuscripts with decision” queue and choose to “create a revision.” The revised document should show all changes (e.g., in Track Changes or a different font color). Please also include a blinded copy of the response to the reviewers’ comments, which should be submitted as a “supplementary file for review.” As with all submissions, the names and contact information for authors should appear only in the cover letter.

*Book Reviews* must be between 1250 and 1500 words. The focus of book reviewed must directly relate to issues covered in the journal. Include the book author, title, ISBN number, cost, publisher, edition, and date published. Reviews should include the following elements: scope of text and target market; level of experience required for the reader; type of information provided in the text; main topics included in the text; a listing of the book’s strengths and weaknesses; recommendation for its use.

*Professional Perspective* manuscripts should address a current issue in the professional business community (e.g., assessment, diversity, discrimination, marketing strategies, ethics in leadership, accounting restraints, globalization, outsourcing, downsizing, recruiting). Manuscripts must be between 1500 and 2500 words. Structure for submissions should include: an overview of the issue being addressed; historical perspectives on the issue; current workplace examples of the issue; potential outcomes in terms of impacts on personnel, costs, legal matters, and other parameters; impact of proposed business models on creativity and innovation; how proposed model relates to trends in industry or business in general; and recommendations to business faculty as to what they may do to assist in resolving the issue.

Once received, manuscripts are reviewed by a consulting editor and one of the executive editors. The review process takes approximately three months.

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